

2005

Alcohol and drug related offences: Determining predictive factors for reducing re-offending

Rachel Bennett
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**Alcohol and Drug Related Offences: Determining Predictive Factors for Reducing
Re-offending**

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March 2005

USE OF THESIS

The Use of Thesis statement is not included in this version of the thesis.

Abstract

The association between dependent drug use and criminal behaviour is well known. This, coupled with evidence about the efficacy of treatment in addressing drug use, has led many jurisdictions to incorporate treatment interventions into their criminal justice systems. The aim of these interventions that use the law as a therapeutic agent (known as 'therapeutic jurisprudence') is to reduce, by mandating drug dependent offenders into treatment, future offending. However, within the treatment effectiveness literature there is also evidence of individuals resolving their drug use problems without engagement in treatment. The term 'natural recovery' has been used to describe this phenomenon. Research into the processes involved in natural recovery has led to the development of the concept of Recovery Capital. Recovery Capital refers to an individual's pre-existing access to social, community, physical and interpersonal, resources that facilitate and sustain change. In this research the notion of recovery capital was operationalized into a 100 item questionnaire that tapped the domains known to constitute recovery capital, namely Physical, Human, Social and Cultural Capitals. The key innovation of this research was to test out the predictive value of Recovery Capital for re-offending in a cohort of 150 drug related offenders. The impact on outcome of Recovery Capital was compared to other known criminogenic, demographic and drug use factors on the recidivism rates over an 18 month follow up period. The research was driven by four hypotheses. The first of these was that there would be a positive association between levels of Recovery Capital and outcome. This hypothesis was upheld. Not only were the levels of recovery significantly associated with outcome, but it was found that for every one point increment in global recovery capital score the risk of re-offending dropped by 5%. The second hypothesis was that the component parts of recovery capital would not be individually influential in determining outcome. This hypothesis was rejected. Each of the constituent components of recovery capital, namely Social, Physical, Cultural and Human, was significantly associated with outcome. The two strongest predictors were found to be Human and Cultural capitals with a one score increment respectively resulting in a 5.4% and a 9.2% decrease in risk of re-offending. The third hypothesis was that the disposition (sentence) handed down by the court would not influence outcome. This hypothesis was upheld, the court dispositions of court mandated treatment, probation, incarceration, community service order or a fine had no impact on re-offending. The final hypothesis was that recovery capital, when compared to other potential predictive variables would be the

strongest predictor. This hypothesis was upheld in that recovery capital, when analysed using multivariate regression, was found, along with age, to be the best predictor of outcome. Persons with high, as opposed to low, levels of recovery capital were 80% less likely to re-offend. The implications of these findings are that the social embeddedness of an individual, rather than any clinical or judicial intervention, is critical in determining the risk of re-offending. As such recovery capital merits greater investigation, and acknowledgement, as a criminogenic variable.

Candidate's declaration

I certify that this thesis does not, to the best of my knowledge and belief:

- (i) Incorporate without acknowledgement any material previously submitted for a degree or diploma in any institution of higher education;
- (ii) contain any material previously published or written by another person except where due reference is made in the text; or
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Signed *12 January 2006*

Acknowledgements

This research would not have been possible without the support and co-operation of the staff at the Jersey Probation and Aftercare Service and the staff at the Jersey Alcohol and Drug Service. In particular I would like to thank Brian Heath, Chief Probation Officer and Helen Miles, data manager and general whizz with computers, for their enthusiasm and commitment to research into best practice. I would particularly like to thank Helen for allowing me to 'camp out' in her office while I collected the necessary paperwork and for making herself available to liaise with me about my research. I would like to thank Mike Gafoor, Director of the Alcohol and Drug Service and Jane Finlay for their advice and support.

From Australia I would like to thank my supervisor Professor Alison Garton for her patient support and guidance. I would also like to thank Gavin McCormack for his invaluable statistical advice and his patient approach to my never ending queries. I would also like to thank my partner Bill for his fortitude in living with me during the writing of this thesis!

This thesis is dedicated to the memory of

Dr David Spencer

4/10/37 – 22/1/00

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Chapter One A review of the literature

Drugs and Crime

The drug use and crime association

The relationship between drug use and crime has long been accepted. However, the precise nature of this relationship has also been much debated. One of the proposed explanations for the association between drug use and crime is the cost of dependent illegal drug use. Illegal drug use is expensive, with heroin, cocaine and crack being the most expensive substances. In the United Kingdom individuals using these substances spend, on average, £323 (\$775 AUD) a week on drugs, whereas users of other drugs spend an average of £190 (\$456 AUD) a week (Bennet & Holloway, 2004). Numerous studies suggest that the use of illegal drugs is strongly related to the commission of criminal acts (Best, Sidwell, Gossop, Harris, & Strang, 2001; Chaiken & Chaiken, 1990; Hammersley, Forsyth, Morrison, & Davies, 1989; Stewart, Gossop, Marsden, & Rolfe, 2000). Although dependent users obtain income from a variety of sources (Hough, 1994), many steal to fund their drug use. Jarvis and Parker (1989) found that the majority of heroin users whom they interviewed were committing crimes to cover the costs of their £500 (\$1,200 AUD) per week heroin habits. Bennet (1998) found that higher levels of illegal income were related to the use of heroin and crack cocaine and almost half of the drug using participants in Bennet's study reported that their drug use was connected to their offending. It is known that drug users, particularly opiate users, generate illegal income through shoplifting, drug dealing, burglary, fraud, street theft, car theft, prostitution, and begging (Edmunds, Hough, Turnbull, & May 1999).

Before going much further, it is worth noting that only a small proportion of drug users become involved in crime. Illegal drug use is common place. According to Ramsay, Baker, Goulden, Sharp and Sondhi, (2001), around half of people aged between 16 and 30 have used drugs at some point in their lives. However, only a small proportion go on to develop serious problems associated with their drug use (Edmunds, Hearnden, & Hough, 1998). A review of nationally gathered data indicated that only a minority of drug users progress to become problem users. Using data from the British Home Office Addicts Index and the British Crime Survey, Edmunds et al. (1999) estimated that only around "three percent of those who use illegal drugs each year are 'problem users' who would benefit from treatment" (p. 7). When considering the remainder 97% of individuals who engage in casual or recreational drug use, there is

little evidence of clear links between drug use and crime (Edmunds et al. 1999).

Offending and illegal drug use

Figures from the British Crime Survey (BCS) indicate that, in Britain, 141,060 drug offences were recorded in the year 2002-2003 (Dodd, Nicholas, Povey, & Walker, 2004). However, this figure only includes offences of drug trafficking, possession and criminal damage under the value of £20. It does not include the many other offences that drug users commit to fund their drug use. Estimates in the United Kingdom indicate that between 20% and 60% of offenders either use, or are dependent on, illegal drugs (Home Office 1997; Parker & Newcombe 1987). Home Office research studies involving the voluntary urine testing of arrestees found that 61% had taken at least one illegal drug, with one in five of the 61% who had taken an illegal drug testing positive for heroin and one in 10 for crack cocaine. The research results also indicated that property offenders were 23% more likely than other offenders to test positive for opiates, and 14% more likely to test positive for cocaine. Also, almost 50% of shoplifters tested positive for opiates and 30% tested positive for cocaine, and one in 10 domestic burglars tested positive for opiates (Bennett, 1998; Bennett & Sibbitt, 2000). A recent study conducted by Bennet and Holloway (2004) investigated the prevalence of drug use amongst 3,091 arrestees in England and Wales. They also used voluntary urine analysis and interviews with offenders to gather their data. Similar to previous findings, Bennet and Holloway found that 69% of arrestees who agreed to provide a urine sample at the time of their arrest tested positive for one or more illegal drugs. Of the interviewed arrestees, 18% were repeat offenders. Of the arrestees who reported using one or more illegal drugs in the last 12 months, and committing one or more acquisitive crimes, 60% acknowledged a link between their drug use and offending behaviour. Drug using arrestees also reported higher levels of illegal income (£17,000; \$40,800 AUD) than did non-drug using arrestees (£6,000; \$14,444 AUD) (Bennett & Holloway, 2004). Drug monitoring of police detainees in Australia revealed that 48% of the detainees self reported using drugs prior to their arrest (Milner, Mouzos, & Makkai, 2003). The most common arrests were for violent and property offences, with 21% of detainees who reported using drugs prior to their offence charged with violent offences and 31% with property offences (Milner et al., 2003). Importantly, Ball, Shaffer and Nurco (1983) found that, when drug users were taking opiates, their criminal activity significantly increased, but when they abstained from opiates, their criminality reduced. This relationship is more fully discussed below.

The economic impact of this offending behaviour is significant. Godfrey, Eaton, McDougall and Culyer (2002) investigated the economic and social costs of 'class A' drug use in England and Wales in 2000. They estimated that the costs of criminal justice involvement for drug users (young recreational users, regular users and problem users) were £2,373.5 million (\$5,696.4 million AUD). This figure only included the money spent on processing offending drug users in the criminal justice system. On top of this, there were the economic and psychological impacts that these offences had on individuals and society in general.

Illegal drug use and offending

A recent major British study into the outcome of treatment for drug dependence (The National Treatment Outcome Research Study 1995; known as NTORS) examined the impact of treatment on the lives of 1075 drug dependent individuals. It was found in the intake assessments of the NTORS that in the three months before coming into treatment the cohort reported committing over 70,000 crimes. On average, each study participant committed over five crimes per week. The investigators noted that: "Sixty one percent of the cohort reported committing at least one offence and almost three quarters of the cohort had been arrested in the previous two years on a total of 4,446 occasions" (Gossop, Marsden, & Stewart, 1998, p.9). Gossop et al. (1998) also reported that of the NTORS cohort, 38% were involved in theft, 29% in drug dealing, 15% in fraud, 12% in burglary and 5% in robbery. Of the crimes committed, acquisitive crime was the most common offence, whilst shoplifting accounted for 42% of all arrests. Significantly though, 10% of the clients committed 75% of the crimes (Stewart et al., 2000). In contrast almost half of the clients reported that they had not committed any acquisitive crimes (Stewart et al., 2000). This figure alone is indicative that within a treatment seeking cohort, the prevalence of criminal involvement is highly variable from none to a high level of daily involvement. Best, Sidwell, Gossop, Harris and Strang (2001) also noted that 44 % of their sample of drug users entering a treatment programme did not report any criminal involvement in the month prior to treatment. This is an important finding and speaks to the complexity of the relationship between drugs and crime. Clearly, not all illegal drug users commit crimes (other than the possession of illegal substance) and not all persons engaging in criminal behaviour use illegal drugs. It therefore makes sense to be cautious about suggesting that either one causes the other. Nevertheless there is an overlap.

The nature of the crime-drug relationship

Hough (1994) noted that “studies on the association between drugs and crime seem to either include drug users and look at their involvement in crime; or else take groups of offenders and look at their involvement in drugs” (p. 13). Much of the research to date has also failed to include control groups of non drug users and/or has relied on small sample sizes; consequently this questions the credibility of such research.

As noted by Bean (2002), social scientists, by the nature of their research, are hardly ever able to ascertain ‘cause’ in the way that natural scientists can when they identify specific conditions that cause specific outcomes. Hammersley, Forsyth, Morrison and Davies (1989) emphasised the importance of distinguishing between ‘statistical causality’ (reliably predicting that one variable is caused by the second) and ‘theoretical causality’ (theorising about the predictive association of two variables) when considering the relationship between drug use and crime. Hammersley et al. noted that in order to suggest a statistical relationship between drug use and criminal behaviour, two things need to happen. First, drug users’ criminal behaviour needs to be compared to a matched control group of non drug users’ criminality so that base rates can be established. Secondly the impact of other variables on drug use needs to be considered so that relative magnitude of effects can be assessed. Bean (2002) argued that it is misleading to talk of ‘links’ with crime or to create the impression of somehow being trapped in certain social or psychological circumstances that determine drug use or crime. Instead, he proposed that a less ‘deterministic’ term be used. Bean recommended that the term ‘cause’, if at all used, “is used in its weakest sense, where there is no sufficient condition, but there may be a necessary one” (p. 10). Hence, to say that drug use causes crime, “is to say nothing more than there is a tendency, or a trend, to associate drug use with criminal behaviour” (Bean, 2002, p.11). Bean concluded that at best a weak causal link between drug use and crime can be made and that differences in crime involvement are probably associated with differences in client characteristics and behaviours and these are reflected in patterns of drug use.

A variety of theories explaining the crime and drug relationship have been proposed. Some researchers suggest that drug use leads to crime and the frequency of crime is directly proportional to the frequency of drug use and severity of dependence (Bennet & Holloway, 2004; Hall, Bell, & Carless, 1993; Hammersley et al., 1989). Others have suggested that crime and drug use are linked via an association with

deviant subcultures (Bean & Wilkinson 1988; McBride & McCoy, 1982). An alternative perspective is that criminal activity and drug use are linked by a common cause either psychological distress or sociocultural deprivation. Xiuli, et al., (1998) noted that drug users are a heterogeneous group, and drug use may be a cause of crime or a consequence of criminal association. They agreed that the causal direction of this link varied between and within individuals and also over time.

Although a strong connection between drug use and crime has been discussed extensively in the literature, researchers openly acknowledge that "empirical evidence of causality running from drug use to criminal behaviour is difficult to obtain due to research constraints and data limitations. Drug use may be the catalyst for criminal activity, but the aetiology involving drug use and crime is complicated to articulate and difficult to measure" (French, McCollister, Kebrau, Chitwood, & McCoy, 2004, p. 218). Some of the possible influential factors in this relationship are discussed in the following section.

Influential factors in the drug crime relationship

It would seem that an individual's drug of choice can have a significant impact on his or her lifestyle and involvement in crime. As noted, the use of heroin, cocaine and crack is more expensive than the use of other drugs (Bennet 1998; Bennet & Holloway, 2004). Also, the regular use of more than one substance increases the cost of a person's drug use and this seems to increase his or her illegal activities (Hammersley et al. 1989). In their study of arrestees, Bennet and Holloway (2004) found that although users of heroin, cocaine and crack represented a tenth of all the arrestees, they were responsible for 31% of the illegal income reported. Bennett (1998) reported that higher levels of illegal income were related to the *dependent* use of heroin and crack. Klee and Morris (1994) also noted that apart from the drug of choice, and the number of drugs regularly consumed, the nature of the individual's 'relationship' with his or her drug use also had significant impact on a person's criminal behaviour.

It is useful here to introduce the notion of a disaggregated approach to drug problems. First proposed by Thorley, in 1982, a disaggregated approach avoids terms such as drug abuse or misuse and instead categorises drug problems according to the user's relationship with his or her drug. According to Thorley, there are three types of drug related problems namely, problems of intoxication, problems of regular use and problems of dependent use. Recreational substance users may become intoxicated and this could result in criminal behaviour, but they are less likely to encounter as many

legal or social problems as more dependent users. For example, the social drinker who ventures out for a night of drinking may, as a result of intoxication, engage in boisterous and 'out of character' behaviour that results in him or her being arrested. However, the social drinker drug user is less likely to have an extensive criminal record as a result of his or her substance use. The means by which recreational substance users maintain and support their habit is also likely to be very different to that of a dependent drug user. Hough (1994) noted that most casual drug use (i.e., recreational drug use) is relatively inexpensive. The evidence indicates that only a small proportion of 'recreational drug use' is funded by acquisitive crime. Some casual drug users do, however, get involved in property crime and spend a proportion of the income they derive from such crimes on drug use (Hough, 1994). However, this evidence does not constitute a causal link between drug use and offending: offenders also use the proceeds of crime for living expenses as well as the purchase of drugs. Hough (1994) made the distinction that in such instances the crimes committed could be considered as 'drug related' rather than 'drug driven'. The implication is that 'drug driven' crimes are committed for the purchasing of illegal substances to manage problems of drug dependency whereas 'drug related' crime compensates for short falls in expenditure to cover day to day living expenses. Individuals who encounter problems of regular use may repeatedly offend (for example, the repeat drink-driver offender). However, given their type of drug use, it is hypothesised that these individuals are likely to engage in specific crimes and are less likely to broaden and develop their offending repertoire.

Dependent drug users, however, are in a different situation. Often their drug use is much more entrenched in their lifestyle and they encounter problems of drug dependence rather than problems of intoxication or regular use. Often their spending on their drugs represents a significant amount of their expenditure. Many dependent drug users finance their drug use through crime (Jarvis & Parker, 1989; Lo & Stephens, 2002). Clearly, drug dependence, as opposed to drug use per se, is an important factor in the relationship between drugs and crime.

Given that users have different relationships with drugs, the precise nature of the causal process linking drug use and crime can take several forms. In summarising American research evidence, Chaiken and Chaiken (1990) found that some drug users progress from recreational drug use to dependent drug use and then to property crime whereas other drug users had a history of acquisitive crime that came before their drug use. Chaiken and Chaiken (1990) also found evidence that linked the regular use of

heroin and cocaine to predatory crime, whereas the regular use of other drugs was less predictive of predatory crime. Heroin dependency coupled with polydrug use was also associated with persistent offending. Interestingly, a reduction in drug use, that was brought about through treatment, lowered offending rates. Hammersley et al. (1989) report findings related to Scottish opiate users that were broadly consistent with American research. Clearly, an individual's choice of drug and the nature of his or her use of this drug influenced offending behaviour. Klee and Morris (1994) investigated the association between crime and drug misuse in injecting heroin users and injecting amphetamine users. They reported on the different lifestyles that were associated with different types of drug use. The sociability of amphetamine use was clearly contrasted to the isolating effects of heroin. Respondents in the Klee and Morris study spoke about their drug use being related to crime in a positive way. Amphetamine users spoke about the drug induced effects of alertness and confidence that were associated with their drug use. Klee and Morris concluded that factors other than the economical benefits of crime needed to be considered when assessing the association between drug use and crime. Of particular relevance was a person's drug of choice, particularly a person's preference for stimulants or opioids.

It seems logical to suggest that the background and personal circumstances of the user may influence both the user's choice of drug and his or her pattern of use. For example, if possession of an illegal drug is discounted, recreational use of ecstasy is not usually associated with crime. It is possible that this is, in the main, because of the socio-demographic characteristics of the population taking ecstasy. Ecstasy users are more likely to be occasional drug users, who are socially stable, employed, and do not have a pre-existing criminal history (or a subsequent criminal career). This is in contrast to heroin users who are often from more impoverished backgrounds, are often unemployed, have more limited access to housing and restricted socio economic opportunities. They are also often polydrug users. The emotional and psychological benefits of drug use are clear 'pull factors' into drug use, but it seems also that demographic factors such as poverty, poor education and low social status are factors that 'push' individuals into establishing particular patterns of use. Hammersley, Forsyth and Lavell (1990) proposed that the association between criminal behaviour and drug use was a result of the shared factors of lifestyle and psychological need that promote social deviance. A link between social and economic status has also been considered in the drug - crime relationship. Nurco, Shaffer and Cisin (1984) showed that social

deprivation was negatively correlated with levels of drug use and crime, suggesting that criminal behaviour and drug misuse may be associated with aspects of social deprivation.

Hammersley et al. (1989) noted that criminal experience (success in criminal endeavours) was a better explanation for crime than drug use itself. Similarly, age of commencement of criminality is also an important factor in the drug- crime nexus. For example, Nurco, Kinlock and Balter (1993) showed that individuals, whose criminal career commenced before their drug use, were more likely, than matched comparison groups, to report involvement in crime during adolescence. Hall, Bell and Carless (1993) replicated this finding in an Australian study of methadone maintenance. They noted that heavy involvement in crime was more common among clients who reported having early contact with the criminal justice system. The development of a criminal lifestyle during an individual's formative years appeared to be related to levels of criminality exhibited during later periods of drug dependence.

In summarising this discussion, a comment made by Kreitman (1977) is worth considering. Kreitman made the assertion that the 'clinician's view is hopelessly biased'. In effect, where one looks, dictates what one finds. Thus, in drug treatment seeking populations, one sees one perspective of the crime drug-crime link. However, if one looks at an offender population, a different perspective is found. Both are of course 'true', but both are 'biased'. The real 'truth' of the drug-crime association is possibly three fold. Some people's drug use and crime are driven by the same causative factors e.g., socio-economic disadvantage and or psychological distress. For others their drug dependence results in them becoming involved in crime and, finally for others, their criminal activity causes them to come into contact with excessive drug use. Relationships that have different aetiological beginnings are inevitably different. Some of the complexity in the crime-drug association may be related to a failure to disaggregate the cohorts under investigation and appreciate that for some drugs and crime are clearly linked whereas for others there is no association whatsoever.

Responses to Drug Dependence

As noted above, the economic and social costs of drug use are considerable. Substance use imposes costs upon the individual drug user, their families, the wider community, industry and society as a whole. It is not surprising therefore that governments and policy makers have invested in finding ways to reduce the costs incurred through drug use. Interestingly, the most effective and cost efficient

intervention for reducing the negative impacts of excessive drug use is treatment (Godfrey, Stewart, & Gossop, 2004; National Institute of Drug Addiction 2001)

Over the past three decades, five large-scale outcome studies assessing the impact of intervention for drug and alcohol dependence have been undertaken. In the USA, three sequential studies occurred. The first was the Drug Abuse Reporting Program (DARP) a longitudinal, multi-site, study in which the demographics and treatment compliance of persons entering treatment were assessed (Simpson & Sells, 1983). This study commenced in 1972 and examined the effects of four treatment interventions, namely methadone maintenance, therapeutic communities, outpatient drug-free services and outpatient detoxification on an initial intake sample of 44,000 clients from 52 treatment agencies. The DARP programme was followed in the 1980s by the Treatment Outcome Prospective Study (TOPS) (Hubbard, Rachal, Craddock, & Cavanaugh, 1984). This study was also concerned with following a large cohort (N=11,000) of illegal drug users through treatment (Hubbard et al., 1984). In the TOPS study the four treatment modalities were methadone maintenance, detoxification, residential and outpatient drug free programmes. The final research study was DATOS or the Drug Abuse Treatment Outcome Studies (Flynn, Craddock, Hubbard, Anderson, & Duntzman, 1997). This was a comprehensive, naturalistic study of over 10,000 persons entering a range of different modalities of treatment (methadone maintenance, short term residential, long term residential and outpatient drug free treatment). The next major study of the impact of treatment was the British NTORS study (National Treatment Outcome Research Study, Gossop et al., 1998). Again this was a longitudinal, multi-site, investigation of the impact of treatment (residential, residential rehabilitation, methadone maintenance and methadone reduction) on over 1,000 persons coming into contact with standard, or real world, treatment (as opposed to a research designed intervention). The fifth and final study was the United States Project MATCH investigation (Project MATCH research group, 1997). Project MATCH was distinct from the other studies noted above because the impact of treatment on alcohol dependence was investigated based on the premise that different types of intervention (three theoretically distinct interventions) would each have a differential impact. In effect, the study was designed to provide answers to the question: Which type of client does well with what type of therapy? The intent was to conclude from the data gathered that people with alcohol dependence could be effectively matched to different interventions. The above studies represent a core of knowledge about the effectiveness

and efficacy of treatment. Consequently, they have been extensively cited in the treatment outcome literature. In January 2004, Australia commenced its own treatment outcome study. Heroin users seeking treatment (N=745) were recruited from three States and 80 heroin users not seeking treatment were recruited in New South Wales. The sample was recruited from 19 treatment agencies and the three main treatment interventions were methadone/buprenorphine maintenance, detoxification and residential rehabilitation. In New South Wales, at the one year outcome stage, substantial reductions in heroin and other drug use were reported (methadone maintenance 68%, detoxification, 54%, residential rehabilitation 69%). A reduction was also noted in a non-treatment sample but was less (25%). Considerable reductions in the percentages of participants reporting committing any crime was also reported across the treatment samples (Ross. et al., 2004).

As a result of the above research, a number of 'givens' about the treatment of drug dependence can be assumed with relative safety. The first is that intervention 'works'; essentially consumers coming into contact with various forms of intervention do 'better' than those not so exposed (Anglin, Speckart, Booth, & Ryan, 1989; McLellan, Woody, Metzger, McKay, Durrell, Alterman, & O'Brien 1996). Hser, Anglin, Grella, Longshore and Prendergast (1997) in their review of the 'treatment careers' of drug users noted the cumulative effects of treatment for drug users, with successive episodes of treatment being associated with improved outcome.

The NTORS data showed significant increases in rates of abstinence from illegal drugs in patients from both residential and methadone programmes (Gossop, Marsden, Stewart, & Kidd 2003; Hubbard 1997). This result was deemed to be particularly encouraging because abstinence from illegal drugs was a particularly stringent measure to be applied to such a severely problematic group of drug dependent individuals (Gossop et al., 1998). There was also strong evidence that treatment intervention improved the health outcomes of consumers (e.g., Anglin, Hser, & Grella 1997; Gossop et al., 2003). The improved health outcomes included reduced injecting and sharing of injecting equipment, improved psychological health and reduced morbidity and mortality (Gossop, et al., 2003).

Importantly, treatment is also cost effective. Using the NTORS and DATOS data, it was estimated that for every extra £1/\$1 spent on drug dependence treatment there is a return of £3/\$3 in the cost savings associated with lower levels of victim costs of crime and reduced demands on the criminal justice system (Flynn, Kritiansen, Porto,

& Hubbard 1999; Gossop, Marsden, & Stewart, 1998). Even expensive residential treatments, that can be up to eight times as expensive as non-residential counselling programs, have been shown to be cost effective (Flynn et al.1999; Gossop Marsden, Stewart, & Treacy 2002).

There is therefore good evidence to support the use of treatment. Researchers have thus turned their attention to identifying the components that make treatment effective. As already noted, drug users are a heterogeneous population. Different patterns of drug use and dependence exist both within and between individuals, and these differences require a variety of responses. The majority of drug dependent consumers enter a succession of different treatments and modalities over time (Hser, Anglin, Grella, Longshore, & Prendergast, 1997). Importantly, as shown particularly persuasively in Project MATCH, there is no single best treatment. Instead, a smorgasbord of interventions appears to be necessary and there appears to be an overall equivalence of interventions. Programmes with very different ideological perspectives appear to achieve very similar outcomes (Project MATCH Research Group, 1997). Therefore, non-specific factors, such as the quality of the helping alliance, therapeutic enthusiasm and adoption of a coherent theoretical model of intervention, all appear to be critical in determining good outcome. It seems that these non-specific factors are of particular importance to 'treatment repeaters' i.e., more experienced clients of drug treatment agencies. Treatment repeaters tend to be more discerning about the treatment they receive, responding less to treatment per se than to what they deem to be *good* treatment (Anglin et al., 1997). Outcomes for treatment repeaters in the non-residential treatments in DATOS depended much more on the quality of their current treatment experience than did the outcomes for first time users of treatment (Anglin et al., 1997).

Recovery from addiction thus appears to be a process not an event. Consequently, treatment repeaters are the 'norm' rather than the exception. Treatment repeaters also tend to have more extensive and longer drug using careers and are also more involved in criminality. For this, and other reasons, treatment repeaters may be less responsive to one-off treatment interventions. Instead, they may require more prolonged and multiple episodes of treatment to achieve long-term abstinence and fully restored functioning. However, the evidence shows that even long term drug dependents who have continued, or relapsed into, addiction, despite previous treatments, can benefit from further intervention (Anglin et. al., 1997).

Individuals who are entrenched in problematic drug use often encounter a wide

range of problems associated with their substance use. Although, detoxification and/or the use of appropriate medications (substitution, antagonist and psychotropic) are important aspects of treatment, they are not enough by themselves. Counselling and other therapies are also an integral part of effective treatment. As noted above, it is often the non-specific factors, such as a strong alliance between a client and their treatment worker, that have the most profound impact on a person's drug use. However, to bring about lasting recovery, treatment appears to need to take on a more holistic approach. Hence, treatment has to attend to the multiple needs of the individual, not just his or her drug use. As noted by Moos (2003), "People with addictive disorders exist in a complex web of social forces, not on an island unto themselves, free of social context. Formal treatment can be a compelling force for change, but it typically has only ephemeral influence. In contrast, relatively stable factors in people's lives, such as informal help and ongoing social resources, tend to play a more enduring role." (p. 3). This is a critical issue that forms the core of the present research, namely what are the relative contributions of social resources (Recovery Capital) and intervention in prompting recovery?

Given the potential role of social recovery factors, it is not surprising that all of the above outcome studies have shown that retaining clients in treatment is important. Longer stays in treatment are consistently associated with better outcomes (Hubbard, Craddock, & Anderson 2003). It has been argued that longer treatment durations encourage social stability and social re-connection. This finding of 'longer is better' is particularly so for rehabilitation where three months plus of care significantly improves outcome (Hubbard et al., 2003; Hubbard, Craddock, Flynn, Anderson, & Etheridge, 1997).

Because clients often leave treatment prematurely, treatment programmes need to include strategies that engage and keep clients in treatment. Of particular interest is establishing the factors that influence clients to stay in treatment for longer. DATOS found that different programmes offering the same form of treatment had very different retention rates. Analysis that disentangled the influence of client differences from programme differences in the DATOS cohort has been carried out. This analysis showed that differences in clients' commitment to change through treatment, at treatment entry, were far more influential than static factors such as the clients' age, gender, history of drug use, criminality, treatment history, employment or relationships (Joe, Simpson, & Broome, 1998). Commitment to change through treatment improved

clients' confidence in treatment and the quality of their client-counsellor relationship. In turn these helped to enrich the content of counselling session and vice versa. This would suggest that even with less motivated clients, treatment services can retrieve the situation if at intake, and within the first few weeks of intervention, they take steps to bolster the client's confidence in, and commitment to, therapy. The forging of strong client-counsellor relationships, in which the client's concerns and problems can be addressed, appears to be of significant importance. This finding is of particular interest to the current research study that examines which factors predict recidivism. Given the above DATOS findings, it is of importance to find out the relative contributions of Recovery Capital and intervention on recidivism rates for persons whose criminal behaviour is associated with drug dependence.

In summary, it is well established that treatment 'works' and that increased treatment contact (in terms of both duration and repetition of care) results in better outcomes, even for individuals at the severe end of the drug using spectrum. It has been demonstrated that the type, or model, of treatment is less important than so-called 'non-specific' factors, such as the development of a sound therapeutic alliance. It has also been well documented that drug users' needs are diverse and change over time. In order to accommodate these needs, treatment services need to provide a 'smorgasbord' of interventions that are readily accessible to drug users. These treatment interventions need to be holistic in nature so that they address more than just an individual's drug use. Motivation is an integral part of any change process and, as noted above, this is particularly so amongst drug users.

The benefits of treatment have not been restricted to the alcohol and drug arena. Over the past decade there has been a revival of interest in offender rehabilitation, particularly offender treatment. Alongside this, there has been a debate about the nature, ethics and usefulness of coerced treatment. These topics are discussed in the following sections.

Responses to offending behaviour

Management of offenders

The question of how society should respond to those who break its laws remains a topic of considerable debate. The crux of the debate is a moralistic issue - should offenders be punished for their actions and/or should some attempt be made to rehabilitate them? Hollin (2002a) reflected this dilemma by noting that criminal justice

systems could adopt a 'constructive' approach (the system invests in therapeutic approaches that induce beneficial change in offending behaviour) or adhere to a 'destructive' approach in which the application of legal sanctions takes something away from offenders.

Hollin (2002a) identified three 'camps' or stances in this debate. These were (i) retributionists, (ii) the utilitarians and (iii) the humanitarians. The 'retributionists' hold the view that the function of the criminal justice system is to punish the offender for his or her wrongdoing. From the retributionists' perspective, punishment is deemed to be an end in itself and no consideration is given to other outcomes such as prevention or rehabilitation. The utilitarian approach is predicated on the idea that the function of the criminal justice system is to reduce recidivism as opposed to just punishing individuals. However, this perspective generates a debate about which intervention is the most cost effective and morally acceptable way of reducing re-offending. The humanitarian approach is predicated on the unconditional delivery of rehabilitation. There is a growing consensus that a significant number of offenders have experienced social, psychological and/or economic hardships (Farrington, 1995). Often they have been victims of physical, sexual and/or emotional abuse (Widom, 1989). Hollin (2002a) argued that "in view of this deprivation and victimisation it could be argued that in a humane society offenders are deserving recipients of rehabilitative interventions" (p. 159). Given the differences between the retributive, constructive and humane perspectives, it is inevitable that there will be much debate about the appropriateness or otherwise of treatment for offenders.

The reliance on punishment has been both a long-standing and politically approved response to social deviance. The notion of punishment is that it will deter the offender from further wrongdoing. As noted above, the associations between drug use and crime often result in dependent drug users having contact with the criminal justice system. Penalties for drug related crime typically revolve around punishment. Initial sanctions often include fines and/or community service orders. Often, with their increased frequency of contact with the criminal justice system, drug users receive increasingly serious penalties including imprisonment. In line with the retributionists' view, incarceration is believed to punish past offences, prevent by imprisonment re-offending, and deter the drug users from committing further crimes upon release. Imprisonment is also considered to deter others from committing drug related crimes.

However, the impact of imprisonment as a response to drug related crime is

uncertain. The evidence indicates that imprisonment fails to reduce drug related offending and furthermore does not appear to act as a deterrent to others (Andrews, Zinger, Hoge, Bonta, Gendreau, & Cullen, 1990; Hall, 1997). There is considerable evidence that drug dependent offenders continue to use drugs while they are incarcerated (Keene, 1997). Unfortunately such use is often associated with risky drug using behaviours, such as the sharing of needles that exposes users to the risk of catching HIV or other blood borne viruses such as hepatitis C (Cregan, 1998). Hence, rather than reducing drug use, incarceration may maintain or even exacerbate the consequences of drug use. A number of countries including Britain and Australia have seen dramatic increases in their prison populations. Carach and Grant (1999) reviewed changes in Australia's prison population between 1982 and 1988. They found a 102 per cent increase in imprisonment rates with the number of prisoners in 1982 rising from 9,826 to 19,906 by 1996. A Home Office publication (2003) reviewed Britain's prison population between the years 1988 – 2000. The results of this review showed that Britain's prison population rose steadily from 1993, peaked in 1998 and then had a marginal (1%) reduction in 2000. The increase in costs associated with the growing prison population has also brought the appropriateness of incarceration as a punishment for drug offenders into question.

In view of the fact that incarceration does not provide the answer to managing drug related crime, alternative strategies and interventions have had to be considered. Evidence of this shift in thinking can be seen in the national drug policies of Europe, the United Kingdom and Australia. These policies have subtly moved away from the espoused 'war on drugs' and have to some extent adopted a harm minimisation approach to the management of drug use. An important component of these policies is the introduction of a therapeutic response for the management of drug related crime. Although coerced treatment for offenders is by no means a new concept, the last couple of decades have seen a revival of interest in offender rehabilitation, and in particular treatment interventions for drug using offenders. The following sections outline some of the key areas in this ongoing debate.

Offender rehabilitation

Since the 1960s, the popularity of offender treatment has fluctuated. It reached an all time low during the 1970s when Martinson (1974) published a much cited paper and prompted a 'what works?' debate. In his paper, Martinson (1974) expressed his view that neither education nor psychotherapy could overcome, or even substantially

reduce the powerful tendency for offenders to continue in criminal behaviour. Other researchers at this time also supported this pessimistic view (e.g., Brody, 1976; Lipton, Martinson, & Wilks 1975). These researchers observed that most of the research to date was undermined by poor methodology, and even methodologically sound studies failed to provide evidence that intervention could significantly reduce recidivism (Brody, 1976; Lipton et al., 1975). However, continued research in the area of the treatment of offenders has seen a resurgence of optimism. During the 1990s, meta-analyses of the offender treatment literature brought about a revival of optimism in the area of offender treatment (e.g., Andrews et al., 1990; Lipsey, 1995; Redondo, Garrido, & Sanchez-Mecca, 1999). These meta-analyses and the associated syntheses (e.g., Cooke, & Phillip, 2001; Gendreau, 1996; Losel, 1995) have provided considerable support for the effectiveness of offender treatment. In effect, when the recidivism rates of 'treated' offenders were compared their untreated counterparts, the treated group fared less badly (Hollin, 2002a). The results of the meta-analyses also indicated that some interventions had significantly higher impacts than others (Hollin, 1999; Lipsey, 1995). The effective interventions with offenders were found to employ cognitive behavioural methods, high treatment integrity and tailored interventions to client needs. Andrews et al. (1990) viewed treatment as 'appropriate' when it takes account of offenders' level of risk, their needs and their responsibility. As discussed by Cooke and Philip (2001), 'appropriate treatment' is ensuring that individuals are suited to the treatment interventions to which they are referred. According to Andrews et al. (1990), higher levels of service need to be reserved for offenders who have a greater number of characteristics that are associated with recidivism. Treatment interventions need to directly address, and target, the criminogenic needs of offenders. Finally, offender treatment needs to be flexible in its delivery so that it can be matched to offenders' abilities and learning style. Importantly, the results of the meta-analyses indicated that punitive measures were ineffective in reducing rates of recidivism (Hollin, 2002b).

In light of the positive messages that have emerged from the 'what works' debate, offender rehabilitation has become fashionable. Hollin (2002a, p.160) noted that the "The field of offender treatment has adopted a program based approach where practitioners are trained to adhere closely to a research-based treatment manual to deliver a behaviour change program". Offender behaviour programs have therefore become standardised in their administration and typically include a specified number of sessions, are broadly delivered in a group format and incorporate set exercises that are

believed to address particular treatment targets.

This programmatic, perhaps somewhat formulaic, approach to offender treatment has raised technical issues of its own. Amidst this debate is an issue that has featured in the broader clinical literature as well, of whether manual based treatments are the most effective intervention. The main criticisms of manual based treatments are the absence of individualised treatment and case formulation, the applicability of the research on unrepresentative samples, the dominance of a particular theoretical model and the restriction it places on clinical artistry (Wilson, 1996). In light of these criticisms there has been a recent and hesitant move towards updating the design and delivery of programs for offenders. Researchers are paying more attention to the variables that bring about lasting change e.g., the role of the therapist in offender treatment (Marshall & Serran, 2004).

In his relatively recent paper, Hollin (2002a) described an offender program that has broken away from the traditional approach of offender treatment. The STOP START project (Attenborough, 2002) that has been established in Durham in the United Kingdom adopted a 'systems approach' to offender treatment, where the emphasis is on individual case management rather than fitting an individual's needs into the limitations of a traditional program. In the STOP START project the individual needs of offenders are assessed and a needs profile is developed that is then used to plot the offenders route through the program. A modular format, as opposed to a more prescribed approach, has been adopted in this programme, this modular approach increases the program's flexibility in targeting individual offenders' needs. The STOP START project is of particular relevance to the current research question because of the emphasis it places on addressing criminogenic need as opposed to offence type. Offenders have multiple needs, some personal and some practical, linked to their offending. Recovery Capital, the concept under investigation in the current study, is a proposed means of assessing an individual's collective assets and strengths (and their deficits) so that areas of need can be identified. Interventions can then be targeted to address these needs.

The STOP START programme (Attenborough, 2002) operated within the prison and the community. Hence, professionals both within and outside the criminal justice system are utilised. As noted by Hollin (2002a), the theoretical underpinnings of the STOP START project encompassed criminological and psychological theory. It moved the emphasis away from a singular approach and encouraged practitioners to consider social, as well as individual, factors. Given the complexity of recidivism and behaviour

change, it is likely that an eclectic therapeutic approach may be more beneficial than an over-reliance on a single theoretical theory such as cognitive behavioural therapy. Hence, suitably complex and intricate responses both within prison and within the broader community need to be embraced. The concept of Recovery Capital, like the Level of Service Inventory (LSI) assessment tool, allows the social and individual factors that may influence recidivism in an individual to be considered. Indeed, the current study is also of interest because it compares both LSI scores and levels of Recovery Capital as predictors of recidivism. However, the Recovery Capital measure, in contrast to the LSI, includes additional psychological variables such as the influence of an individual's family of origin experiences and how this may have impacted on his or her ability to establish appropriate and fulfilling adult relationships. The Recovery Capital measure also looks at a person's drug use and drug use treatment in more detail. It is anticipated that the current study will add to the literature by providing some understanding of the relevant significance of the various components of Recovery Capital in determining recidivism rates.

In summary, the treatment of offenders, as against their punishment, is a key issue in offender management. Over the past decade, the support for offender rehabilitation has increased. To date most offender treatment interventions have adopted a programmatic approach. This work has taken a standardised group approach that has used mainly a cognitive behavioural framework. However, recent research has emphasised the importance of establishing a more flexible treatment stance that addresses the individual criminogenic needs of offenders as opposed to addressing their offence type. A 'systems' approach seems to be emerging whereby the individual and social needs of offenders are addressed both within prison and within the community.

Coercion

With the increased use of offender rehabilitation programmes, there has been a debate about whether it is ethical to coerce individuals into treatment. In terms of the treatment of substance dependence, coercion remains in the addictions field a controversial issue. As noted, offender rehabilitation and treatment are becoming a progressively more accepted course of action. Essentially, the programmes offered to offenders are coercive because there are negative consequences for non-participation in treatment. For example, failure to participate in a treatment programme could result in an individual not being eligible for parole or being incarcerated as opposed to receiving a community sentence. The consequences of non attendance also vary between

jurisdictions.

There is considerable confusion surrounding the term coercion and its relation to intervention. As noted by Farabee, Prendergast and Anglin (1998), the language that is used to when talking about coerced treatment is far from consistent. Terms such as "coerced", "compulsory", "mandated", "involuntary", "legal pressure" and "criminal justice referral" can all be found in the literature on coercion. This would not be an issue if these terms were interchangeable, but "coercion is not a single well-defined entity: it in fact represents a range of options of varying degrees of severity across the various stages of criminal justice processing" (Farabee et al., 1998, p. 3). Coercive treatment interventions for the management of substance dependence are not new. As far back as the late 1800s, the Scottish Inebriates Reformatory Act (1898) was an attempt to force chronic alcohol dependent individuals into treatment. Individuals were sentenced to two years of reformation, largely in isolated, rural asylums. Although, the effect of such incarceration was, in terms of abstinence, ineffective, the Act was an early attempt to mandate offenders with alcohol problems into treatment. In America, in the 1920s, coerced treatment began with morphine maintenance clinics. In the 1930s came the setting up of compulsory federal narcotics treatment facilities in Fort Worth, Texas and Lexington, Kentucky (Farabee et al., 1998).

In terms of coercive treatment, two major legal forms of coercion can be identified: (i) civil commitment and (ii) judicial commitment. Civil commitment for substance users is the involuntary referral of substance users into treatment by agencies, such as civil courts, drug treatment or medical agencies. During the 1960s, civil commitment procedures were implemented in North America. These included the California Civil Addict Program, the New York State Act and the Federal Narcotic Addict Rehabilitation Act (for historical reviews see Anglin & Hser, 1991; Finn, 1985; Leukefeld & Tims, 1988). In his review of the efficacy of civil commitment in treating narcotic addiction, Anglin (1988) concluded that civil commitment was an effective way of reducing narcotic addiction because it was a useful way of bringing users into treatment. Although he noted the benefits of civilly committing drug users into treatment, he was also clear in his belief that civil commitment should not replace voluntary treatment.

The 1970s marked the beginning of the present system that relies more on judicial commitment than on a civil commitment procedure. Judicial commitment is the committal to treatment by a court order. Within this judicial based framework, the

emphasis is on community based treatment as an alternative to incarceration or as a condition of probation. Essentially, offenders are given a choice about accepting the order, but in reality it resembles more of a 'Hebson's choice' than a real choice. It is this aspect of coerced treatment that many practitioners, particularly treatment service providers, take issue with, preferring to maintain their treatment services as voluntary. However, the distinction between voluntary versus coerced treatment may well be less clear cut than some treatment service providers perceive it to be. The possibility that a significant number of drug dependent individuals, irrespective of court orders, feel coerced to attend treatment is very likely. Anyone who has worked with drug dependent users will be aware that drug users often refer themselves into treatment as a result of feeling coerced by family members, employers and friends.

As noted by Day, Tucker and Howells (2004), there is a distinct difference between coercion in the arena of offender rehabilitation and the coercion that is found within psychiatric (e.g., compulsory admission to a psychiatric hospital) and prison settings (e.g., use of seclusion cells for prisoners who are deemed to be at risk for suicide). As is common practice, when there is a demonstrable risk of harm to an individual or others, clinicians are able, even expected, to compel such individuals to take the necessary actions to keep themselves and/or others safe. In these instances, the individual does not have a choice. Offenders, however, can not be physically forced to attend rehabilitation programmes or, even if they do attend, to participate fully. As argued by Day et al. (2004), "directly coerced rehabilitative treatment in its absolute sense is impossible" (p. 260). Instead they suggest that as opposed to being coerced, offenders are actually 'pressured' into engaging in treatment because their decision of whether or not to engage in treatment is influenced by negative consequences for non-participation.

Coercing offenders into treatment has been justified because treatment is believed to bring about benefits for an individual and/or to reduce the harm caused to others. Although some offenders have insight into the difficulties that their substance use is having on them and society in general, many high risk offenders do not demonstrate such insight (Raine, 1993). It is argued that in these instances some pressure to attend treatment is necessary if they are to profit from a rehabilitation programme. Reducing harm to others, though, is perhaps a more realistic rationalisation for 'pressuring' offenders into treatment. As noted in the previous section, the evidence indicates that the use of treatment in the management of problematic substance use can

and has been found to significantly reduce offending behaviour and consequently the harm caused to others (Godfrey, et al., 2004).

'Therapeutic jurisprudence' is a relatively new concept that has become influential in the area of coerced treatment (Wexler, 1998). In therapeutic jurisprudence, the role of the law as a therapeutic agent is considered. Therapeutic jurisprudence is the term given to the consideration of the impact of the legal system on an individual's well being. It also examines the extent to which the correctional system maximises therapeutic opportunities for rehabilitation (Birgden, 2002). Within the model of therapeutic jurisprudence it is considered appropriate for courts to pressure offenders into treatment if it is considered to be in the interests of both the individual offender and the community (Birgden, 2002).

Given the controversy surrounding coerced treatment, its effectiveness as an intervention is likely to have a key role in determining its acceptability. According to Day et al. (2004), to date the research on the coercion of offenders has focused predominantly on within-treatment outcomes (e.g., getting people into treatment and keeping them there) and treatment outcomes (e.g., reduced substance use and/or offending). This said, Miller and Flaherty (2000) conducted a review of the literature on the effectiveness of coerced addiction treatment and concluded that coerced addiction treatment was found to be effective and cost beneficial. Indeed they noted that "the lack of research that showed coerced addiction treatment to be ineffective was striking" (p. 14). Likewise, Farabee et al. (1998), from a review of 11 outcome studies on compulsory substance abuse treatment, concluded that, "empirical studies have largely supported the use of coercive measures to increase the likelihood of an offender's entering and remaining in treatment" (p.4). According to Marshall and Hser (2002), however, "reviews of outcome research on legal coercion are generally equivocal as to its efficacy" (p. 180). A number of researchers have presented a somewhat pessimistic and hesitant view about the benefits of coerced treatment (e.g., Miller, 1985; Rotgers, 1992; Wild, Cohen, Mann, & Ellis, 1995). However, even though the evidence base is limited, some useful findings about the effectiveness of coerced treatment for offenders have been determined. Following a review of four major drug treatment studies (DARP, TOPS, DATOS and the National Treatment Improvement and Evaluation Study), Goldsmith and Latessa (2001) reported two major findings. First, length of time in treatment predicted outcome with a minimum period of 90 days being necessary for treatment to be effective, but that 12 months was generally the minimum effective

duration. Their second major finding was that coerced patients stayed in treatment longer. Anglin and Hser (1991) in their study of methadone clients showed that treatment outcomes were not determined by the reasons for entering treatment, but the length of time remaining in treatment. This finding reflected that of Simpson and Friend (1988) who found that the source of referral (legal compared with family/friend driven referrals) for clients in the DARP treatment made no difference to the effectiveness of treatment outcomes.

Researchers whilst trying to establish whether coerced treatment is as effective as voluntary treatment have focused their attention on identifying possible differences between voluntary and coerced clients (Anglin, Brecht, & Maddahian, 1989; Farabee, Nelson, & Spence, 1993; Kline, 1997). The aim has been to identify the differences between such groups of clients so that treatment interventions, where necessary, can address differing treatment needs or motivation. The research to date has generally focused on sociodemographic, rather than psychosocial, characteristics (Anglin et al., 1989). Few systematic differences between voluntary and legally mandated clients have been found. However, Kline (1997), in her study of 996 men and women in residential drug treatment in northern New Jersey, found differences in demographic characteristics between the two groups as well as differences in attitudes and behaviours likely to impact on treatment outcome. In terms of demographic differences, mandated clients were younger, more likely to be male, and less likely to be black than other clients. They also reported better health status and better social and psychological adjustment, less homelessness, fewer health problems, lower levels of psychological distress, better family adjustment, and fewer medical, social, and drug problems requiring intervention. Farabee et al. (1993) found legally mandated clients to be less motivated to participate in treatment, but did not find any differences between these groups with respect to psychological distress.

Marshall and Hser (2002) set about attempting to describe the sociodemographic and psychosocial characteristics of three different client groups receiving treatment for substance dependence from community treatment facilities. Three groups were examined: (1) clients mandated by the criminal justice system to receive treatment; (2) clients currently involved in the criminal justice system, but whose treatment was not legally mandated; and (3) clients who had no criminal justice contact at programme entry. Marshall and Hser (2002) found that nonmandated clients shared characteristics with both the criminal justice mandated clients and the no criminal justice contact

groups. Their research results also demonstrated differences in terms of demographic characteristics, criminological factors, drug using profiles and psychological and physical health between the groups. Of particular interest were the significant differences in motivation towards treatment, and confidence in treatment, between the mandated and the non-mandated groups, with mandated clients scoring significantly lower than the other two groups. Clearly, engaging mandated clients in treatment is a difficult task, and one that requires considerable therapeutic skill. Managing the hostility and resistance that coerced clients may bring to their treatment is likely to be a critical feature of any successful intervention. Treatment providers working with coerced clients need to be aware that they are not working in a dyadic relationship. Instead they are in a triangular relationship that includes the client, the therapist and the coercer (Goldsmith & Latessa, 2001).

Much of the research to date has assumed that coercion and referral source are interchangeable concepts or that coercion can be directly inferred from referral source. However, the assumption that all criminal justice clients are entering treatment involuntarily has little empirical support. For example, Farabee (1995) in a study of 1,030 male prison inmates in Texas, 50 percent of the general population said that they would be interested in participating in an alcohol or drug treatment program at that time. Among those indicating an interest, 50 percent reported that they would be willing to participate in an in-prison treatment program even if it meant extending their prison sentence by three months (Farabee, 1995). Wild, Newton-Taylor and Alletto (1998) believed that clients' perception of their experience of entering drug treatment was a more potent means of understanding coerced treatment than a reliance on the referral source as a means of distinguishing between coerced and voluntary clients. In their study of perceived coercion in clients entering a substance dependence treatment programme, Wild et al. (1998) found that 35% of court referred clients in a substance use programmes felt no coercion and 37% of self-referred clients felt coerced into attending treatment. Thus, legal pressure is only one form of coercion in that even a proportion of self-referred clients perceived that they were attending treatment under coercion. Previous research studies have demonstrated that other pressures such as social and family pressures also induce individuals to seek help for their substance use (Hasin, 1994; Hingson, Mangione, Meyers, & Scotch, 1982). Consequently, coercion and pressure are not simple objective facts. An individual may feel coerced into treatment when there is no objective requirement to engage in treatment. Similarly, a

person may be objectively coerced into treatment (e.g., by a court) but have little subjective sense of being coerced because the treatment is congruent with their own goals (Day et al., 2004; Wild et al., 1998). Also, the source of referral does not of itself determine the level of coercion (O'Hare, 1996).

Motivation has been proposed as a key component of successful treatment interventions (Miller, 1985). A key model of motivation is that proposed by Deci and Ryan (2000). They proposed that all people are motivated by a desire to meet basic needs of autonomy, competence and relatedness. They noted that motivation occurs on a continuum from extrinsic to intrinsic motivation. Deci and Ryan proposed that extrinsic motivation can shift to intrinsic motivation by a process whereby pressure is internalised through positive experience. Thus, even if offenders perceive high levels of coercion forcing them into treatment, as they engage in treatment and find it beneficial, their intrinsic motivation increases and their level of perceived coercion decreases (Wild et al., 1998). If offenders are extrinsically motivated and experience their exposure to treatment as unhelpful, they will be more likely to drop out of treatment if the coercive influence is removed. Hence, in order to keep offenders in treatment, close attention needs to be paid to increasing an offender's internal motivation. Given that mandated clients demonstrate lower motivation to enter treatment (Marshall & Hser, 2002), therapists and clinicians need to be attuned to these varying levels of client motivation. More importantly clinicians need to be adept at increasing and maintaining clients' motivation to change.

Leukefeld and Tims (1988) viewed recovery from substance dependence as an interactional phenomenon that involved client factors (external and internal motivation) with non treatment factors such as social climate as well as treatment itself. They argued that a stable recovery cannot be maintained by external pressure alone, i.e., legal pressure alone cannot bring about a lasting recovery. Commitment and motivation to maintain recovery can only be achieved from intrinsic drive. Hence, they suggested that the role of external pressure e.g., a legal referral, is to influence a person to enter treatment. Once clients have entered treatment, it then becomes important for the treatment providers to assist clients in increasing their internal motivation to achieve lasting recovery. A lack of internal motivation for change is associated with lower treatment retention rates (De Leon & Jainchill, 1986) and inferior outcomes (Simpson, Joe, & Rowan-Szal, 1997).

Levels of problem recognition have also been identified as being an important

motivational factor. Wild et al. (1998) found that the less clients viewed themselves as drug dependent, the more they reported feeling coerced at treatment entry. As suggested by Day et al. (2004), it may be that individuals' perceived level of coercion is associated with their personal treatment goals. Hence, for clients who acknowledge their need for treatment, and recognise that treatment is likely to be helpful, coercion to attend treatment will be less of an issue.

In summary, there has been a surge of interest in coerced offender treatment over the past decade. The most ethically defensible form of legally coerced treatment appears to be judicial commitment whereby dependent offenders are referred by a court to receive treatment for their alcohol and/or drug problems usually instead of a custodial sentence. In this instance offenders still have a choice, albeit a constrained one. Although civil commitment into treatment has proved to be effective for the management of substance dependence, it is viewed as the least defensible form of coerced treatment because of the lack of choice for the offender.

The evidence for coerced treatment has been mixed, but it has provided some optimistic findings. The source of referral does not necessarily equate with a client's perception of coercion. Clients who enter drug treatment voluntarily can experience coercion from a variety of sources other than the criminal justice system, for example, family pressures to seek help. However, clients who are coerced into treatment tend to remain in treatment longer and achieve better outcomes. It is still unclear as to precisely why this is the case. However legal coercion may provide the necessary external motivation to engage in treatment, and once offenders are in treatment, their insight and understanding of their drug use increases, and treatment is then seen as being compatible with their personal goals. Consequently their internal motivation to stay in treatment increases.

The impact of treatment on the management of drug related crime

One confounding variable relating to the impact that treatment has on drug and alcohol related offending behaviour is the issue of whether that intervention is voluntary or coerced. At one level the distinction between voluntary and coerced is simple – coerced clients are told to attend, whereas voluntary clients decide for themselves. However, another way of considering this distinction is to see voluntary clients as those who have some internal motivation to address the problems caused by their substance use. The second group then refers to substance users who are coerced into treatment as a result of outside pressures i.e., they are externally motivated to engage in treatment. It is

important to note that these cohorts are not static nor mutually exclusive. Many substance users, depending on their personal circumstances, are likely to move between voluntary and coerced substance dependent treatment. It is also worth noting that source of referral does not necessarily determine whether an individual engaged in treatment is a voluntary or coerced client. Thus many purported voluntary clients say they were coerced by friends, family or spouses to engage in treatment. Conversely, it has been noted by clinicians, including those involved in this study, that court mandated clients often welcome the opportunity to engage in treatment and therefore do not view the experience of mandated treatment as overtly coercive. Most studies to date have not taken account of this variable and instead have relied on source of referral to distinguish between voluntary and coerced clients. For the purposes of this review, since it relates directly to the study at hand, coerced treatment refers to treatment that is delivered to individuals as a result of their contact with the criminal justice system. In many ways a more accurate term might be 'mandated treatment'.

The impact of non-mandated treatment on drug related offending

In a detailed analysis of the economic costs and consequences of drug misuse and treatment among clients recruited to NTORS, Godfrey et al., (2004) found that the economic benefits of treatment were essentially achieved by reductions in crime and the victim costs of crime. Godfrey et al. estimated that costs of crime fell by £16.1 million (\$38.64 million AUD) during the first year of NTORS and by £11.3 (\$27.12 million AUD) million during the second year of treatment. The results from the American based treatment outcome perspective study (TOPS) also demonstrated that drug treatment was cost effective and cost beneficial. Criminal justice savings were significant with a 30% decline in costs to victims of drug-related crimes and a 24% decline in costs to the criminal justice system (Harwood, Collins, Hubbard, Marsden, & Rachal, 1988). Similar findings on changes in crime costs have also been found in other studies of treatment samples, based mainly in the United States (e.g., Cartwright, 2000; Flynn, Kristiansen, Porto, & Hubbard, 1999; Flynn, Porto, Rounds-Bryant, & Kristiansen, 2003). Worthy of note is that the findings of NTORS indicated that even the most chronic and dependent problem drug users can make significant outcome gains as a result of treatment (Gossop, et al., 1998).

The British NTORS study is of relevance because the significant reductions in drug use reported by the cohort over the period of the follow up resulted in a marked reduction in the cohort's offending behaviour. At the one year follow up period, the

rate of acquisitive crime had approximately halved (Gossop, Marsden, Stewart, & Rolfe, 2000). These improvements were maintained at the two year, and four to five year, follow up periods where rates of criminal involvement fell from 60% at intake to 20% to 28% (Gossop et al., 2003). Further evidence that drug treatment reduces drug users' criminal activities has also been found in other major treatment studies. In the Drug Abuse Reporting Program (DARP), arrest rates amongst drug treatment clients declined by 74% after treatment discharge (Simpson & Sells, 1982). In the Treatment Outcome Prospective Study (TOPS), three to five years after treatment, the proportion of clients involved in pre-treatment predatory crimes decreased by one third.

Research based in an inner London out-patient drug clinic reported by Coid, Carvell, Kittler, Healey and Henderson (2000) found that of 81 opiate users who entered methadone based treatment, over half had reduced their heroin related offending after six months. Bell, Mattick, Hay, Chan and Hall (1997) found from their study of 300 patients attending three low intervention methadone clinics, that being in treatment substantially lowered criminal behaviour. Similarly, and importantly, Merrill, Alterman, Cacciola and Rutherford (1999) found that each prior treatment history reduced the probability of a post-treatment arrest by 25%. This cumulative effect of treatment is important in that the impact of interventions on drug use per se has also been recognised to be cumulative (NIDA, 2001). In another study, Anglin and Powers (1991) investigated the effects of methadone maintenance and legal supervision (including drug use testing) of the behaviours of drug dependent individuals. Their results showed that methadone maintenance resulted in a broader range, and greater magnitude, of improvement than legal supervision. The important caveat on this work is that although persons voluntarily going into treatment may subsequently reduce their criminal behaviour, the consequent assumption that persons who commit drug related crime can therefore be best managed by coercive treatment may be an erroneous conclusion. However, this assumption is at the cornerstone of many countries' attempts to reduce drug related criminal behaviour. The following section reviews the treatment interventions that are available at different stages in the criminal justice system

Drug courts, coerced treatments and other responses

As noted in previous sections, no causal link between drug use and crime has been established. However, there is a sufficient amount of evidence that suggests drug use, in particular heroin and crack cocaine use, is strongly associated with acquisitive crime. Also, increased dependence on a drug and therefore increased use of a substance

equates with an increased rate of offending. Reducing drug related crime is a key aim in many countries and this is reflected in their drug policies. In an attempt to reduce crime levels many countries (such as America, Australia and the United Kingdom) have introduced interventions for drug users into the criminal justice system at various contact points such as at arrest, at sentencing, in prison and in the community.

Arrest referral schemes

As implicit in the name, arrest referral comes at entry to the criminal justice system (i.e., at the point of arrest). The aim of such schemes is to identify problem drug using offenders in the criminal justice system, encourage them to address their drug problem and refer them to appropriate treatment to manage their drug use and offending. The intention of arrest referral schemes is to make contact with drug using offenders soon after their arrest and make accessible to them intervention programmes that, if they had not been arrested, they would, in all probability, not have sought out. Arrest referral schemes do not provide an alternative to prosecution; instead they provide a short circuited path to drug treatment. The basis of this approach is that treatment will lead to a reduction or cessation of drug use and thus reduce offending.

The majority of arrest referral schemes rely on the voluntary involvement of problem drug using offenders. However, some schemes use more 'pressurised' measures, such as deferred cautions, to engage drug misusing offenders (Sondhi & O'Shea, 2002). A proactive model, whereby an independent drug worker, based in or near the custody suite, assessed those offenders with drug problems and referred them to an appropriate treatment service was found to be an effective model of intervention in three demonstration arrest referral schemes (Edmunds, Herenden, & Hough, 1998). The available evidence is that the arrest referral schemes can deliver reductions in drug use and offending behaviour. For example, Edmunds et al. (1998) showed that amongst 128 offenders who were seen by an arrest referral worker, large reductions in self reported drug use were noted. The total number of criminal offences committed per month was reduced from 10,800 in the month before contact with an arrest referral scheme to 2,200 in the month before interview. Average expenditure on drugs fell from £400 (\$960) per week to £70 (\$160) per week six months later (Edmunds et al., 1998). An evaluation of arrest referral schemes was commissioned by the Home Office and carried out by Sonhi and O'Shea (2002). The findings of their evaluation replicated the previous research findings of Edmund et al. (1998). From a cohort of 50,000 individuals who were screened by arrest referral workers, 58% were referred to a specialist drug

service. Following contact with an arrest referral worker, there were significant reductions in the level of police re-arrest rates six months later. Sixty seven percent of problem drug-using offenders were arrested less often following referral than before. Substantial reductions in self reported offending were also noted. The level of self reported shoplifting fell by 50%, with a two thirds drop in the levels of burglary, fraud and street robbery. Sonhi and O'Shea's (2002) evaluation report confirmed previous research findings by clearly demonstrating that substantial reductions in offending behaviour occurred for individuals who took up treatment through arrest referral. Of particular importance is the implication that arrest referral schemes are successful in contacting problem drug using offenders at an earlier point than they might otherwise have considered. Almost half of the cohort screened by an arrest referral worker had not previously accessed specialist drug treatment services (Sonhi & O'Shea, 2002). However, Sonhi and O'Shea's evaluation also showed that problem drug users who were referred by an arrest referral scheme were significantly more likely to drop-out of treatment than were self or general practitioner referred drug users. It seems clear that treatment services need to do more to address the high rate of attrition amongst arrest referral clients.

Drug courts

Drug courts are a relatively recent introduction into the criminal justice system. The first one was established in Miami, America, in 1989. Since their introduction, drug courts have become an integral part of the American criminal justice system with over 1,183 drug courts being operational by the year 2003 (West-Huddleston, Freeman-Wilson, & Boone, 2004). Australia, Canada, Puerto Rico the Republic of Ireland and Scotland have recently introduced drug courts into their criminal justice systems (Bean, 2002; Belenko, 2002; Eley, Malloch, McIvor, Yates, & Brown, 2002; Indermaur & Roberts, 2003). Although drug courts vary on a number of dimensions, most are designed to achieve two primary goals - a reduction in drug use and a reduction in criminal behaviour. They operate on the basis that the criminal justice system has the ability to influence a person shortly after a significant triggering event, such as an arrest, and thus are able to persuade (compel) that person to enter and remain in treatment. The drug court model combines components of the criminal justice and substance use treatment systems to bring about drug abstinence and prosocial behaviours and treatment retention amongst substance using offenders (Belenko, 2002; Bean, 2002).

Drug courts differ philosophically and structurally from traditional judicial

proceedings (Belenko, 2002). Traditional criminal courts deal with cases by relying on the penal and criminal procedure laws, and little interest is shown in the offender's underlying substance use. Drug courts on the other hand pay less attention to determining guilt, or sentencing drug offenders, and instead focus more on understanding and addressing the offender's substance use and associated problems. The ultimate aim of drug courts is to bring about abstinence from drug use in the presenting offender and to prevent a relapse back into drug use and continued criminal behaviour. This is achieved by identifying and then targeting the aspects of an offender's life that are believed to be contributing to a person's criminality. Once these areas of need have been identified, drug court programmes provide the clinical and social services that are considered to be necessary to address the presenting problems (Belenko, 2002).

Drug courts are essentially court based treatment programmes that involve placing eligible offenders under the jurisdiction of the court (Bean, 1996). Drug courts generally use two main access routes to treatment services; they either directly employ treatment providers or they refer offenders to existing treatment services. In each case treatment workers are required to provide up to date evaluations of the offenders' response to treatment to the court. Offender progress is primarily monitored by drug testing. Judges review and respond to this feedback speedily. Offenders who do well are given more privileges such as less frequent drug tests and court appearances. However, for those whose participation is considered to be inadequate, they may be placed in custody for a short period, be required to attend court more often or receive a judicial warning. Offenders are rarely expelled from the programme because drug addiction is regarded as a chronic condition where lapse and relapse are to be expected (Bean, 2001).

An essential feature of the drug court is the control exercised by the court through the judge, where all members of the court including legal representatives are part of the court team. Another feature that sets drug courts aside from traditional courts is that drug court judges have the power to impose and enforce sanctions whenever the offender fails to abide by the required conditions. There is no legislation in common law tradition that permits multiple sanctions (Bean, 2002). As also noted by Bean, repeated breaches of probation are rarely tolerated and it is unlawful for a traditional court to punish an offender repeatedly for such breaches. Drug courts have also formalised interagency relationships and this has been argued by Hough (1994) to be an essential component of effective approaches to drug treatment in the criminal justice system. This

alliance between the judicial system and treatment services has profound implications for the working practices of each agency. The traditional and established roles of these agencies have had to be adjusted in order to accommodate this intervention. Although a significant amount of success has been attributed to this type of alliance, many treatment workers remain sceptical and resistant to the idea of working therapeutically for the court.

Drug courts have gained wide acceptance as an alternative to traditional adjudication and sentencing of offenders with underlying drug problems. However, as noted by Belenko (2001, p.6), there has been a "paucity of empirically sound and comprehensive research on drug court operations and impacts". The findings from evaluation studies have been mixed and inconclusive, possibly resulting from a number of conceptual and methodological problems. For example, drug court evaluations vary with respect to eligibility requirements for participants, length and nature of treatment provided and frequency of drug testing and court appearances (O'Callaghan, Sonderegger, & Klag, 2004). Drug court evaluation studies have differed in their scope and methodologies. Drug court studies have used relatively short follow up periods and many of them have failed to use matched comparison and control groups (Belenko 1998). Results from evaluation studies are also limited by the small number of outcome variables that are used. Typically crime and drug use are the variables chosen (Goldkamp, 1994) and little attention has been given to outcomes such as post program drug use, employment and other similar variables. Finally, because of the short follow up periods employed in most evaluations Belenko (1998, 2001) pointed out that the long term effectiveness of drug courts in reducing drug use and crime in comparison to individuals who go through the traditional court system, has not been proven.

In his latest review of 37 drug court evaluations, covering 36 different drug courts, and using only evaluations that were completed by external reviewers, Belenko (2001) found results that were consistent with his previous reviews conducted in 1998 and 1999. He concluded that drug use and criminal activity reduced while participants were in the program, completion rates for drug court orders were higher than those for orders imposed in other courts, and drug courts provided more comprehensive forms of supervision and drug testing and monitoring than other forms of community supervision. Lower post-program recidivism rates for the drug court group as compared to a comparison group of similar offenders, who did not participate in the drug court programme were also noted (Belenko, 1999, 2001). These reductions in recidivism rates

meant that drug courts generated cost savings as result of reduced prison use (Belenko, 2001).

A very recent study released by the National Institute of Justice in the United States reported that in a sample of 17,000 drug court graduates, only 16.4% had been rearrested and charged with a felony offence within one year of graduating from the program (Roman, Townsend, & Bhati, 2003). An analysis of six adult drug courts in Washington State demonstrated that the average drug court participant produced \$6,779 (AUD \$8,677) in benefits that stemmed from reductions in recidivism (e.g., avoided criminal justice system costs and victim costs). Research carried out in California revealed a cost-benefit saving of \$18 million per year through California drug courts (Judicial Council of California & California Department of Alcohol & Drug Programs, 2002).

Spohn, Piper, Martin and Frenzel (2001) investigated recidivism in drug court participants using two comparison groups and several indicators of recidivism. Their study showed that drug court participants had lower levels of recidivism than offenders who were adjudicated upon by traditional methods. They also found that, when level of risk was accounted for, drug court participants had a similar recidivism rate as diversion programme participants.

Clearly, drug courts have the potential to bring about positive changes in drug use and associated criminal behaviour. They also appear to be cost effective and politically in favour at present. However, given the limitations of the research that were noted above it remains difficult, at present, to predict the long term outcome of this type of intervention.

In the Australian context, drug courts have been established since 1999 in the five states of NSW, Queensland, South Australia, Western Australia and Victoria. Indermaur and Roberts (2003) have reviewed the development and impact of these courts. Their analysis highlighted a number of significant implementation and procedural issues. Perhaps the most important issue is that the aims of the drug courts (to reduce imprisonment and recidivism) may be suborned by the enthusiasm of staff and community members to involve 'deserving cases' in treatment, rather than exposing them to punitive sanctions. As Indermaur and Roberts noted, this may have resulted in 'low risk' (from a criminogenic perspective) clients being involved in the drug courts. They concluded: "The possibility that drug courts... may simply provide enhanced treatment services to community based clients is a real prospect. In reality such an

outcome would be easier for everyone involved with drug courts but would ensure that the drug court would not achieve the objective of reducing imprisonment and recidivism rates. This is because the resources of the drug court will be diverted to offenders who are less likely to re-offend in any case.”(p. 150).

In addition to this germane operational criticism, Indermaur and Roberts (2003) were also critical of the methodologies adopted to evaluate drug courts. In effect, they considered that given the difficulties inherent in undertaking evaluations of drug courts (e.g., difficulties in determining appropriate comparison groups and the small number of participants graduating from drug courts), the question as to whether drug courts work had to remain open, or in Scottish parlance remained ‘not proven’.

Drug treatment and testing orders

In 1998 Britain introduced Drug Treatment and Testing Orders (DTTOs) as a community sentence. DTTOs are court orders that require offenders to undergo treatment for their drug problems, either alone or alongside another community sentence. They are targeted at offenders who commit crimes to fund their drug habit and who are willing to participate in treatment. The aim of DTTOs is to reduce the amount of crime committed to fund a drug habit. DTTOs give the court power to impose drug treatment on willing participants and to monitor their progress during treatment. Courts can not dictate the content of the treatment, but they can specify some of the terms of the treatment. Mandatory drug testing and court reviews are integral components of DTTOs. If offenders fail to comply with the requirements of their DTTO they can be returned to court and re-sentenced for their original presenting offence. The DTTOs were developed through consultation with key stakeholder agencies. Therefore, like drug courts, DTTOs provide a framework in which multiple agencies can work together in addressing substance misuse and offending. From personal experience of being involved in the introduction of a similar treatment order programme in Jersey, the fact that the courts could not dictate the content of the treatment that the offenders had to undergo particularly appealed to the health workers involved because it protected both their autonomy and their work ethics. In the Jersey experience, enabling treatment workers to maintain control of the treatment services delivered went a long way to bridging the gap between health agency working cultures and criminal justice agency cultures.

Prior to a national roll-out, DTTOs were piloted in three areas in the United Kingdom. The 18 month evaluation of these pilot studies (N=210) show that the

average amount spent on drugs fell from £400 (\$960 AUD) per week before arrest to £25 (\$60AUD) per week in the early stages of the order. Drug use and crime were substantially reduced in the small number of offenders who had completed their orders at the time of the evaluation (Turnbull, McSweeney, & Hough 2000). In an examination of the impact of DTTOs on two year reconviction results however, the results were less favourable. Hough, Clancy and Turnbull (2003) found that 80% of the 174 DTTO offenders who were able to be followed up had been reconvicted. Completion rates for DTTOs were low; of the 161 offenders for whom outcome data were available, 31% finished their orders and 67% had their orders revoked. However, Hough et al. found that reconviction rates for offenders who completed their orders were significantly lower than the reconviction rates of offenders who had their orders revoked. Offenders who completed their DTTOs also reduced their annual reconviction rate to well below their reconviction rates in the five years preceding their DTTO (Hough et al., 2003). Although these results do not look overly positive it was suggested that these results were more indicative of 'implementation failure' rather than 'theory failure'. Offenders who completed their orders showed considerable reductions in their reconviction rates; however each of the pilot sites experienced difficulty in retaining offenders on the programme. Turnbull, McSweeney, Webster, Edmunds and Hough (2000) outlined the problems encountered by the pilot sites, namely long waiting lists and difficulty in agencies working together as teams. As with drug courts, the impact of DTTOs on recidivism rates remains open to question.

In terms of understanding precisely 'what works' in community based interventions for the management of drug related offending, the process is still in the formative stage. Some promising results have emerged but a considerable number of adjustments need to be made before the success of these systems can be accurately assessed. A key issue from the available research is that the infrastructure that delivers community interventions needs to be well established. Of particular importance is the establishment of sound working relationships between multiple agencies, the provision of ongoing financial resources that will enable front line agencies to deliver the necessary services and the integration of sound and effective evaluation mechanisms.

Recovery Capital

Natural recovery

As noted above, there is a significant amount of empirical evidence that supports the usefulness of treatment interventions for the management of drug and alcohol

related problems. However, treatment is not the only means by which individuals resolve their substance use problems. There is a considerable amount of evidence supporting the proposition that recovery from alcohol and drug dependence without treatment is a common occurrence. A number of studies of so-called 'spontaneous remission' (a poor term because giving up alcohol and drug dependence seems to be a process not a one off event) have been undertaken across the addictive behaviours. Spontaneous remission, or natural recovery, is not a new phenomenon: in fact there are references to untreated recovery from addiction in American literature as far back as 200 years ago (Cloud & Granfield, 2001). Although the research literature on untreated recovery is not extensive, it is consistent and indicates that a greater proportion of dependent drug users 'recover' without seeking treatment than those who achieve remission following treatment. This occurs across the full spectrum of drug dependence. For example, abstinence rates of 10 – 60% have been observed in groups of untreated dependent users of alcohol (Hermos, Locastro, Glynn, Bouchard, & DeLabry, 1988; Sobell, Cunningham, & Sobell, 1996; Tuchfeld, 1981), cocaine dependents (Murphy, Reinerman, & Waldorf, 1989), heroin dependent persons (Maddux & Desmond, 1980; Biernacki, 1986), amphetamine dependents (Klee, Wright, & Morris, 1999) and polydrug dependents (Granfield & Cloud, 1999). Such recovery has been demonstrated to be durable with demonstrated periods of recovery spanning from four to 12 years.

Much of the research on natural recovery has documented the widespread prevalence of this type of recovery. One of the best examples of this is the work of Sobell, Cunningham and Sobell (1996). These researchers found from the examination of data from two general population surveys that some 77% of individuals who had resolved their alcohol dependence had done so without any treatment contact. Natural recovery among drug-dependent individuals is also equally impressive. Waldorf, Reinerman and Murphy (1991) in a study of 106 recovered cocaine dependent users, found that nearly three quarters of their sample had ceased their drug use without any treatment contact. They also found that those who ceased their drug use without treatment were more likely to achieve this on their first attempt than those who engaged in treatment.

The results of the studies on natural recovery indicate that there is no single pathway out of drug dependence (Simpson, Joe, & Lehman, 1986). Instead, successful movement from 'addiction' to recovery seems to be driven by an amalgamation of 'avoidance oriented' factors ('pushes out' of addiction) and 'approach-oriented' factors

(‘pulls into’ a more conventional lifestyle) (Waldorf, 1993; Walters, 1996, 2000). ‘Pushes out of addiction’ primarily involve the adverse consequences of drug use that significantly impact on the individual and force him or her to take stock and assess whether drug use is ‘worth it’. The spontaneous recovery literature is replete with case histories that include individuals’ reports of negative physical, social, health or legal consequences of drug use (Saunders, & Kershaw 1979; Tuchfeld, 1981). Waldorf et al. (1991) investigated cocaine users and found that up to 46% of them experienced work, health or economic consequences that were sufficiently powerful as to prompt cessation from cocaine use.

Conversely, ‘approach oriented’ reasons for stopping drug use are the ‘pulls’ of an improved lifestyle that offers more stability and benefits to the drug dependent individual (e.g., new relationships, jobs and other rewards). In essence, drug dependent users stop their drug use in order to salvage and enhance their stake in conventional life as experienced through jobs, families and friends (Waldorf, 1983). Many drug dependent individuals move out of drug use as a result of positive changes in their life or because of experiencing a significant and positive life event, for example, getting married or forging new relationships (Saunders & Kershaw, 1979). Granfield and Cloud (1999) have, from their sociological analysis of 46 individuals who terminated their dependence on drugs and/or alcohol without treatment, proposed that successful resolution of drug dependence is a four point process. This process begins with increasing ‘strain’ (conflict with self), then a significant ‘turning point’ occurs that prompts ‘cessation’. Movement through to permanent change is achieved if the individual perceives the change as personally rewarding.

Although there is a reasonable amount of information about the prevalence and processes of natural addiction recovery in non-criminogenic populations, there is a more limited understanding of the role of natural recovery from drug dependence in criminal populations. Walters (1996) examined the natural history of substance dependence in 343 medium security federal inmates. A quarter of these drug dependent inmates reported ceasing their drug use on their own (i.e., without treatment contact) prior to their incarceration. Walters (1996) also noted that the rate of spontaneous recovery occurred twice as often than recovery through treatment. Hence, although spontaneous recovery may not be any more effective in facilitating desistance from drug use, spontaneous remission is by no means exceptional in incarcerated criminal populations. Walters (1996) further examined whether incarcerated drug users used ‘approach

oriented' or 'avoidant oriented' strategies to overcome their drug use. There was no statistical difference between the uses of approach or avoidant oriented strategies. The 'quitters' in this study provided a variety of explanations as to why they had successfully given up their drug use, this along with the fact that some participants had engaged in treatment to resolve their drug use provided support for Simpson et al.'s (1986) contention that there is no single pathway out of a drug lifestyle. Participants in the natural recovery group endorsed significantly less items on a measure of drug related negative consequences than subjects who were incarcerated and continued to use drugs. It is possible that the life circumstances of those who continued to use drugs whilst in prison acted as impediments to effective self change. If this is the case then we can expect the rate of untreated recovery within a criminal population to be lower than the rate of untreated recovery in the general population.

In view of the research that has been carried out to date, there is a general acceptance that natural recovery from substance dependence exists. There is also agreement that there is no single pathway out of substance dependence, but rather that individuals rely on both "push" and "pull" factors to address their substance dependence. Until recently however, less consideration has been given to the social environment within which an individual exists and how this environment may impact on a person's ability to resolve their drug dependency without formal treatment. As noted by Cloud and Granfield (2001), little attention has been given to the personal attributes and environmental context in which untreated recovery occurs and not much is known about how an individual's life circumstances may support, foster or hinder individuals entrenched in a drug using lifestyle. Current research findings also make it difficult to identify salient influential factors that can significantly assist or hinder recovery from substance dependence, whether this is spontaneous, or otherwise. To date, research on natural recovery has tended to identify factors influential in overcoming substance dependence, but it has fallen short of explaining how the social context of these factors may influence natural recovery. In an attempt to address this gap in the literature, Granfield and Cloud (1999) introduced the concept of Recovery Capital as a way of capturing the embeddedness of natural recovery strategies within a structural context. "Recovery Capital serves as a useful concept for capturing conditions that can substantially increase or decrease one's capacity to employ effective cessation strategies" (Cloud & Granfield, 2001, p.85). According to Granfield and Cloud, Recovery Capital is a generic term for the individual's pre-existing access to social,

community, physical and interpersonal resources. In essence, Recovery Capital is the existence of assets that an individual has to assist change. The adoption of a Recovery Capital point of view forces the acknowledgement that the distribution of such resources is by no means equal. Granfield and Cloud (1999) suggested that assessing substance dependent clients for their levels of Recovery Capital can help treatment providers make more efficient use of the limited resources available. Intrusive, protracted, as well as expensive treatments, could be reserved for those with the lower amounts of Recovery Capital and those with high levels of Recovery Capital would likely benefit from less intrusive, less protracted, and less costly treatments. Recovery Capital comprises a number of different capitals, namely Social, Physical, Human and Cultural Capital.

Social Capital

As proposed by Cloud and Granfield (1999), Social Capital is a key component of Recovery Capital. Social Capital is essentially an individual's connections to other persons. It comprises different entities. "Social Capital refers to the aggregate of actual and potential resources or assets that emerge from reciprocal social relationships and social structures within which people have access" (W. Cloud, personal communication, October 15th 2003). As stated by Bourdieu and Wacquant (1992), "Social Capital is the sum of resources, actual or virtual, that accrue to an individual or a group by virtue of possessing a durable network of more or less institutionalised relationships of mutual acquaintance and recognition" (p. 119). In essence, relationships matter. By forming alliances with one another and fostering these alliances over time, people are able to work together to accomplish things that they may not have been able to do alone or at least only with increased difficulty (Field, 2003).

People connect through a series of networks and they tend to share common values with other members of these networks. Consequently, these networks constitute a resource and can be seen as forming a type of 'capital'. Such 'stock' is not only useful in its immediate context, but can also be drawn on in other settings. The central theme of Social Capital is that membership in a social group brings about resources, obligations and benefits on individuals who may use this 'stock' to improve their lives. For many, the term Social Capital captures much of the imperceptible qualities of daily life that emanate from membership in certain social circles (W. Cloud, personal communication, October 15th 2003).

Coleman (1988) viewed Social Capital as productive. For example, a group within which there is a significant amount of trust and trustworthiness will be able to accomplish more than a comparable group without the same degree of trust and trustworthiness. Portes (1998) believed "Social Capital stands for the ability of actors to secure benefits by virtue of membership in social networks or other social structures" (p.6). As noted by Portes (1998), the research literature on Social Capital indicated that a person's level of Social Capital is a predictor of various social attributes such as school attrition and academic performance, children's intellectual development, sources of employment and occupational attainment, juvenile delinquency and its prevention, and immigrant and ethnic enterprise. Social Capital enables individuals to realise their goals. Of particular relevance to the management of drug and alcohol problems is the fact that "Social Capital is particularly important during life crises because it affects the options, resources, information and supports available to individuals as they resolve their problems" (W. Cloud, personal communication, October 15th 2003). Individuals addressing their substance use would be using their social capital if they responded to the expectations held of them by others that they would be successful in overcoming their drug dependence. Social capital resources could also be influential in securing employment for persons who have lost their job as a result of their drug use. The fostering of Social Capital has also been shown to enhance the life prospects of individuals who possess it. An increased level of Social Capital has been found to increase a person's capacity to overcome individual problems (Hagan, Macmillan, & Wheaton, 1996).

Social Capital is embedded in both individuals and communities. Therefore, Social Capital takes account of the benefits of relationships (e.g., friendship networks, family ties) and the social structures in which these relationships exist i.e., the 'connectedness' of the community as demonstrated by social cohesion and the sociability of the existing networks. Social Capital, unlike physical and Human Capital, relates to more intangible assets such as the diversity of a person's relationships and the intrinsic nature of relations between and among individuals (Coleman, 1988).

There are three central components to Social Capital, namely the 'structural dimension', the 'normative dimension' and the resources that flow from Social Capital (W. Cloud, personal communication, October 15th 2003). The 'structural dimension' of Social Capital literally refers to the 'nature' of a person's relationships i.e., the diversity, strength and type, of relations to which a person has access. Putman (2000) emphasised

the importance of "bridging bonds" in increasing the value of a person's Social Capital. Bridging bonds are those that bring together people from diverse social divisions. The 'normative dimension' of Social Capital refers to the expectation of an individual that they will benefit by their investment. People's willingness to invest in Social Capital is influenced by their perception of the likelihood that such investment will result in mutual respect, trust, reciprocity and co-operation from others Coleman (1988).

Social Capital also provides resources to individuals. Members of a given community can benefit from the links and associations that other members of that community have. Such resources can come from other members' positions or contacts in the broader community; hence the importance of diverse networks. Social Capital can also be a useful source for providing information that influences a person's decisions and behaviours. Informal networks are often vital resources for finding out and sharing information. In order to make things happen people often choose to bypass formal systems and talk to people they know and trust. Studies of ethnic communities (Nee, Sanders, & Sernau, 1994; Portes 1987) show the important function of community networks as a source of vital resources (e.g., tips about business opportunities, access to markets) for ethnic firms. Social Capital also positively influences the creation of Human Capital. Social relations are often essential for the procurement of skills and for increasing a person's awareness about specific areas in their life. People's commitments to, and influence over, one another also act as a means of informal social control.

Most of the analysis of Social Capital has focused on the benefits of Social Capital. Many of these findings are not new. For example, the idea that social cohesion and health are related has been in existence since the 19th century, when Émile Durkheim, showed that suicide rates were higher in populations with low levels of social integration and lower in closely knit communities (cited in Berkman & Glass, 2000). Subsequent research has supported the notion that Social Capital influences individual wellbeing. Social Capital has been empirically linked to improved child development (Keating, 2000) increased mental health (Kawachi & Berkman, 2001), reduced mortality (Kawachi, Kennedy, Lochner, & Prothrow-Stith, 1997) and lower susceptibility to binge drinking (Weitzman & Kawachi, 2000).

Although Social Capital clearly provides benefits to individuals and the community at large, Social Capital inevitably has a darker side. Portes (1998) discussed four negative consequences of Social Capital; these are: (i) the exclusion of outsiders, (ii) excess claims on group members, (iii) restrictions on individual freedoms, and (iv)

downward levelling of norms. Strong social bonds that bring benefits to group members can also prevent others from accessing these benefits. Examples of this type of exclusion can be seen in the control that was exercised by descendants of Italian, Irish and Polish immigrants over the construction of trade unions in New York (Waldinger, 1995). The traditional monopoly of Jewish merchants over the New York diamond trade is another example of the exclusion that Social Capital can bring about (Portes, 1998). Individuals can also use their Social Capital to enhance their position at the expense of others. Close community ties can also curb the success of a business. As explained by Portes (1988), the successful entrepreneur who is approached by job and loan seeking fellow members of his community, in a community where there are strong norms of mutual assistance, may find the success of their business is hindered by these norms. As noted above community and group participation can establish group conformity, however in some instances this conformity can be experienced as restrictive. Finally, there are situations in which group cohesion is generated by a shared experience of adversity and opposition to mainstream society. In these circumstances individuals whose success undermines the group cohesion may be ostracised. The result is the downward levelling norm that keeps members of a downtrodden group in place.

Social dislocation has long been identified as a cause of crime. Putnam (2000) found a strong negative association between violent crime and his Social Capital Index, a measure of Social Capital where "higher levels of Social Capital, all else being equal, translate into lower levels of crime" (p. 308). Rosenfeld, Messner and Baumer (2001) explored the relationship between homicide and a number of other factors including Social Capital for 99 areas across America. They reported that economic deprivation, divorce rate and Social Capital had a significant effect on homicide rates, with crime being the result of ineffectual informal social controls and difficulty in mobilising formal external resources such as law enforcement agencies. Criminality appears to thrive in neighbourhoods where most people do not know one another well, where supervision of teenage peer groups is minimal and where civic engagement is low. Sampson and Raudenbush (1999) in their assessment of the sources and consequences of public order in Chicago, found that the presence of shared expectations within a close knit community lowered the rates of crime and disorder. It has also been proposed that Social Capital may influence crime by giving people the confidence and respect to take action before problems get out of control. Robust social networks can also influence the positive development of young people that ultimately promotes their integration into the

wider community. Integration and positive self esteem in young people has been found to reduce violent crime (Kawachi, Kennedy, Lochner, & Prowther-Stith, 1997). Hagan and McCarthy (1997) highlighted the importance of Social Capital in the lives of young people. They found that the homeless and criminal youth they studied came from families with diminished Social Capital.

Social Capital is useful because it focuses attention on the embeddedness of individual behaviour within social life. It also draws our attention to the influence that the social networks in which individuals participate, have on individual expectations, social norms and obligations, feelings of autonomy and powerlessness, self efficacy, distrust of others and even access to information. Coleman (1988) pointed out that Social Capital influences the creation of Human Capital. Human Capital is more fully described below (see p. 56) but Human Capital essentially relates to personal qualities such as physical and psychological well being. People's access to social networks and social resources will influence their accrual of skills and knowledge, typical assets associated with Human Capital. Social Capital is viewed as being both an accrued 'social stock' asset and a productive and durable asset that requires investments of time and energy to cultivate and maintain it (Hawe & Shiell, 2000). Social Capital is considered to be productive because it enables individuals to achieve certain ends that would be impossible to achieve without it. Hence, financial, occupational and health benefits that individuals accrue can be related to the interactional networks and social connections that they have cultivated and invested in. As noted by Granfield and Cloud (2001), an emphasis on the broader social context of an individual's life shifts the focus of problems such as drug dependence away from the individual pathology, to the broader contextual level. Treatment providers, whose aim is to assist drug dependent individuals to overcome their drug problems, could benefit from understanding the broader social dimensions in which their clients exist.

The progression from Social Capital to Recovery Capital

Research in the addictions arena has evidenced a link between Social Capital and recovery rates from drug dependence. Cheung and Cheung (2000) explored, amongst other variables, the relationship between levels of Social Capital and recovery from drug dependence in 200 male clients in a voluntary drug treatment agency in Hong Kong. The results of this study demonstrated that the possession of positive Social Capital increased the likelihood of an individual's recovery from drug dependence. Cheung and Cheung (2000) showed that embeddedness in a pro-social network through

participation in conventional social groups generated positive Social Capital. This Social Capital 'stock' took the form of guidance, the learning of normal behaviour, informal social control and development of an alternative identity. However, Cheung and Cheung also noted that the re-instatement of connections with drug users led to the creation of negative Social Capital. It seems that contact with drug users re-instated the drug using identity of recovering individuals. Hence, while the possession of positive Social Capital can greatly increase a person's likelihood of recovery from drug dependence, the possession of negative Social Capital reduces such a likelihood.

Granfield and Cloud (2001) investigated the social context of natural recovery from problems associated with drug dependence using data collected from in-depth interviews with 46 former alcohol and drug dependent individuals who had achieved abstinence without engaging in treatment. These researchers found that individuals who successfully overcame their drug dependence did so by engaging in alternative and often new activities associated with religion, education, community and work life. Most of the participants who were successful in overcoming their drug use also renewed old relationship or developed new relationships with family and friends and dropped their associations with the drug using networks. However, the participants in this study were a homogenous group of individuals with stable middle class lives. Many of them were well educated, had good jobs and did not have significant mental health issues. These individuals' drug use had not led to them reaching 'rock bottom'. Most of the individuals in their study therefore maintained some level of social stability and were able to preserve relationships with non-drug using networks. In this instance these individuals had a level of Social Capital that both protected them from becoming entrenched in a drug dependent lifestyle and also enabled them to 'pull' themselves away from their drug using identity. Individuals who overcame their drug and alcohol problems did so within a context of improved life circumstances and social relations. Granfield and Cloud (2001) postulated that a person's pre-existing level of Social Capital influences their ability to address their substance dependence and to re-engage in a more conventional way of life. As noted earlier, from their work on Social Capital and addiction, Granfield and Cloud have introduced the broader construct of Recovery Capital as a way to capture Social Capital and other types of capital that an individual can use to address their drug dependence (Cloud & Granfield 2001; Granfield & Cloud, 1999). In addition to Social Capital, Granfield and Cloud have also included three other types of capital that have been identified as useful resources for helping individuals

overcome major life changes. These other forms of capital are Human, Physical and Cultural Capital. These are described below.

Human Capital

Human Capital (Becker, 1993) is conceptualised as the knowledge, skills, educational credentials, health, and other individual qualities that an individual can rely on to negotiate daily life. "Access to high levels of Human Capital allows an individual to problem solve effectively, respond to threats or stress and generally maximise their potential and obtain important life goals" (W. Cloud, personal communication, October 15th 2003). Just as Physical Capital is created by changes in materials to form tools that facilitate production, Human Capital is created by changes in persons that bring about skills and capabilities that enable them to act in new ways. Human Capital is also considered to be the productive potential of an individual's knowledge and actions (Bartlett & Ghossal, 2002).

Coleman (1988) emphasised the role of Social Capital in the creation of Human Capital in the next generation. Aside from the level of parents' Human Capital, Coleman believed that Social Capital in both the family and the community in which the individual lived played a role in the creation of Human Capital in rising generations. The aspects of Social Capital that he considered to be important in the creation of Human Capital in young children were the nature and quality of the relationships within a family and the nature and the embeddedness of the family within the community at large.

The dimensions that have been used to gauge Human Capital include education, occupational skills and occupational status (Danziger, Kalil, & Anderson, 2000). Human Capital has been examined in a variety of domains. The economic value of Human Capital in the work place has received a considerable amount of attention with research focusing on the efficacy of corporate investment of Human Capital and its impact on productivity. The relationship between levels of Human Capital and welfare dependency has also been explored (Schmidt, Dohan, Wiley, & Zabkiewicz, 2002) as has the relationship of Human Capital dimensions to the psychological and physical well being after job loss (Kanfer, Wanberg, & Kantrowitz, 2001). Human Capital is believed to be highly relevant to individuals' chances of reemployment (Kanfer, et al., 2001).

Given the nature of Human Capital, it seems highly possible that people's pre-existing level of Human Capital will influence their route into excessive drug

dependence and that their drug use will negatively influence their Human Capital whilst they continue to use drugs. Given that economic inequality reflects differing investments in formal education and job skills (Becker, 1993), it is likely that at least some if not the majority of dependent drug users have been affected by this inequality. Drug dependence can impair a person's work capacity and increase welfare use (Kaestner, 1998), thus reducing Human Capital.

In essence, the current study was directed at determining the role of Recovery Capital and its component factors of Social, Human, Physical and Cultural Capitals on recidivism of a cohort of drug using offenders. In the current study, Human Capital was deemed to include education, employment and literacy levels, but in addition a psychological perspective was incorporated. Human Capital was considered to be individual skills and attributes that enable people to negotiate their way through life and manage problems. In this instance the concept was expanded to include a person's physical health, psychological 'wellness' (i.e., how well they function in everyday life) and the nature of their substance use. People's psychological 'wellness' was obtained by gathering information about their development and early childhood experiences, their ability to establish and maintain relationships, their mental health and their personal characteristics (e.g., whether they have a violent disposition and/or are socially oriented).

Physical Capital

Often referred to as economic or financial capital, Physical Capital refers to income, investments, property and other tangible assets that can be converted to money (W. Cloud personal communication, October 15th 2003). In effect, Physical Capital is literally the financial assets of the individual. Physical Capital considered as a 'private good' and property rights makes it possible for the person who invests in Physical Capital to capture the benefits it produces. Hence, the incentive to invest in Physical Capital is not constrained; those who invest in it are able to capture the benefits of their investments. Physical Capital is deemed to be an important resource for persons attempting to overcome their drug dependence because it provides them with options and flexibility in terms of addressing their drug use. For example, individuals with physical capital resources, who decide to extricate themselves from their drug using networks, are likely to find this easier to achieve than persons without such resources. The current study Physical Capital was measured by a person's assets (whether they owned a house, had their own business and had any savings), income and their financial

situation (i.e., whether they had significant debts and whether they were reliant on welfare.

Cultural Capital

Cultural Capital (Bourdieu, 1983) embodies the individual's familiarity with cultural norms and the ability to act in one's own interest within those norms. "Cultural Capital also includes values, beliefs, dispositions, behaviour patterns, and other personal qualities that emanate from membership within a particular culture" (W. Cloud, personal communication October 15th 2003). In effect Cultural Capital is one's sense of acceptance and belonging within a cultural group and is akin to the concept of 'insider' or 'outsider' status. It is important to note however, that some individuals negate their cultural capital by their association with a given group. Drug users often derive a sense of belonging as a result of their connections to the drug using community. However in this instance their 'insider' drug status could be deemed to be a negative influence. As noted by Cheung and Cheung (2000) drug dependent individuals who maintained contact with their drug using peers were more likely to relapse. In the current study, Cultural Capital measured an individuals' connection to Jersey, their connection to the community, and the nature of their accommodation. It also measured the negative aspects of cultural capital i.e., whether an individual was embedded in the drug using community and their association with an offending population. Hence, being enmeshed in a heavy drug using subculture, for example, being a dependent user/dealer would not score as positive item.

Research in the specific areas of physical and Cultural Capital appears to have taken an economical or a health perspective. There does not appear to be any specific research that explores the relationship of these concepts to drug dependence. The current study is therefore of interest because it examines the role of each these four capitals, individually and in their composite form as Recovery Capital, as variables involved in recidivism in a population of alcohol and drug offenders.

Rationale of the current study

The current study

In 1999 the States of Jersey established a court mandated treatment programme for persons who came into contact with the criminal justice system as a result of alcohol or drug related offending. Individuals who committed alcohol or drug related offences were referred by the court to the Alcohol and Drug Service for an assessment as to their suitability for a court mandated treatment intervention. The Alcohol and Drug Service

undertook an individual assessment that was focused on the extent of the client's alcohol and/or drug dependence, the role of the individual's drug use in the commission of criminal behaviour and the motivation of the client for treatment. A recommendation as to the suitability, or otherwise, of the client for a treatment, as opposed to a punitive, disposition of the case was then made to the court. In addition, and importantly, the Probation and After Care Service also undertook independent assessments of the individual's social background and offending behaviour. These reports, known as Social Enquiry Reports (SERs) have a standardised format and were submitted to the court with their own independent conclusions as to the appropriate disposition of the case.

The current research was directed at determining those factors that are influential in reducing future criminality in a cohort of persons convicted for alcohol and drug related offending. Of particular interest in the study was the relative impact of Recovery Capital and treatment interventions. The central hypothesis of the study was that an individual's levels of Recovery Capital at the time of sentencing would be more influential in determining outcome than would be the dispositions handed down by the court or other demographic, criminological or drug use factors. In essence it was contended that the best predictors of outcome would be the levels of pre-existing Recovery Capital. So, for example, there would be no difference in time to re-offending for persons who received court mandated treatment interventions as compared to those who receive non-treatment sentencing. Nor would factors such as drug use per se be influential on outcome.

The study cohort comprised individuals who in the years 1999, 2000 and 2001 were assessed by both the Jersey Alcohol and Drug Service and the Probation Service following referral by a magistrate. All of the referred individuals had a known drug or alcohol problem that was believed by the magistrate to be contributing to their offending behaviour. Data were gathered from the Probation and After Care Service and the Alcohol and Drug Service. Both of these agencies are responsible for providing services across the whole community. Thus, any offenders had contact with the Probation and After Care Service and all persons seeking treatment for alcohol and drug dependence did so through the auspices of the Alcohol and Drug Service. Jersey was also considered to be an ideal place to locate this study because the 'contained nature' of the island means that 'capture' of the follow-up group would be high. In order to put this research into context it is useful to note the demographics of the research site. Jersey is a bailiwick of the United Kingdom and as such has an independent government and

judiciary that determine local policy and practice. The island is situated some 20 miles off the north-west coast of France and 80 miles off the south-west coast of England. It is 45 miles square and has a population of 86,000. The population consists predominantly of local residents (individuals born and raised in Jersey). However, a small, but significant portion of Jersey's population is composed of Portuguese migrants. These incomers are mainly employed in the farming community or the hotel and catering industries. Further to this, Jersey's full employment rate, and low tax status, attract a significant number of young males from the northern cities of Britain. These individuals, along with the Portuguese migrants, are rarely integrated into the main community. This is in part because non-locals are restricted from purchasing houses and are, therefore, required to live in rented accommodation that is often expensive and inadequate. This exclusion from full integrated community living often contributes to high rates of alcohol and other drug use as a means of dealing with social and psychological isolation.

The research was undertaken in six stages. In the first instance permission was sought to gain access to a cohort of offenders. Stage two was concerned with identifying and collecting appropriate demographic, criminological and social data on the specified sample. The third stage was concerned with the development of a measure of Recovery Capital. In stage four the Recovery Capital measure, along with a range of other predictive measures, were assessed in 150 cases of alcohol and drug offending. The fifth stage involved obtaining 18 month outcome data (that is, offence information for this period) for the 150 cases. The outcomes of this cohort were established by reference to the time of significant re-offending (days). This outcome measure was determined by reference to re-referral to the Probation and After Care Service for an SFR report (such reports are only requested when a significant offence has been committed) and thus days to significant re-offending was obtained. It is important to note that the Probation and After Care Service involved in the study covers the entire population of Jersey and thus total tracking of the cohort was possible. It is noted that in this study the term re-offending applies to re-arrest. It is of course possible that some of the non re-offenders had committed offences, but had not been apprehended. The issue here, as with many other criminological studies, is that recidivism rates are in fact re-apprehension rates and often do not accurately reflect true recidivism rates. Thus, in this study the term 're-offender' relates to individuals who had come back into contact with the criminal justice system. The sixth and final stage involved statistical analyses of the data.

Chapter Two Methodology

Research aim

The aim of this research was to determine, from examination of 150 participants who had committed alcohol and drug related offences, those factors that were associated with reductions in re-offending. Of particular interest was the significance of 'Recovery Capital' in the overall outcome. As noted the research was undertaken in six stages, these are described below. The statistical analysis of the obtained data was driven by the following four hypotheses, in all cases outcome refers to days to re-offend:

1. There will be a positive association between level of 'Recovery Capital' and outcome, with individuals with higher levels of Recovery Capital taking longer to re-offend.
2. The constituent components of Recovery Capital, namely Social, Human, Cultural and Physical Capital, will not be individually influential in determining outcome.
3. Although demographic, criminal and drug use factors will influence outcome, it is believed that Recovery Capital will be the strongest predictor of outcome.
4. Court disposition will not influence outcome.

Participants

The cohort comprised 150 individuals who, in the years 1999 and 2000, were referred by a Magistrate to be assessed by both the Jersey Alcohol and Drug Service and the Probation Service. All of these individuals had a known drug or alcohol problem that was believed to be contributing to their offending behaviour. Participants were selected on the basis that they were the first 150 individuals who had a court appearance for an alcohol and/or drug charge after January 1st 2000, and for whom there was a complete data set available: that is, there was (i) a Social Enquiry Report, (ii) an Alcohol and Drug Assessment, (iii) a completed Level of Service Inventory, (iv) details of their criminal record and (v) outcome data for an 18 month period following their initial offence. The date of January 1st 2000 was chosen because it ensured that 18 month outcome data (that is, up until 31st January 2003) were available for the entire cohort.

The demographic details of the sample are outlined in Table 2, in the results section. There were 122 males and 28 females. The age range was 18 and 65 years with a mean age of 32 and median age of 30 years. Fifty-two participants (54.7%) were born in Jersey. All of the participants had over six years of education and 132 (88%) of the sample had completed 10 years of education. Forty (27%) participants completed a

formal qualification after leaving school. The cohort comprised a variety of permanent, temporary and new residents of Jersey. English was the first language of 130 (87%) of the cohort. For the remaining 20 (13%) of the sample, their native language was predominantly Portuguese. However, for a minority of participants, their native language was French. Seventy two (48%) of the participants were employed. Of those in employment, 33 (45.8%) were trade workers, 19 (26.4%) worked in a clerical positions and 19 (26.4%) worked in unskilled manual jobs.

Instruments/materials

Research information about each participant was obtained from four sources. These were: (i) Social Enquiry Reports, (ii) Alcohol and Drug Reports, (iii) Criminal Records of Offences, and (iv) Level of Service Inventory – Revised.

(i) Social Enquiry Reports

Social Enquiry Reports (SERs) are standard reports that are prepared by the Probation Service. The standardised format of SERs ensured that the following information about each participant was obtained: (i) personal background information, (ii) present situation, (iii) previous offending, and (iv) current offences. These reports allow the Court a fuller picture of the offender and assist the Court in determining its disposition regarding the presenting case. However, magistrates were autonomous and therefore had the prerogative to make their own decisions regarding the disposition imposed.

(ii) Alcohol and Drug Reports

The Alcohol and Drug Reports were prepared by specialist drug workers from the Alcohol and Drug Service. The aim of these reports was to provide the court with a fuller understanding of offenders' drug use and how their drug use related to their offending behaviour. The alcohol and drug reports provided information about the history and nature of participants' substance use. This information included: (i) personal background information, (ii) age of onset of substance use, (iii) drug of choice, (iv) the nature and extent of previous and current substance use, past treatment experience, and (v) suitability for treatment. As a result of the working protocols that were agreed between the courts and the Alcohol and Drug Service, mandated treatment was only given in instances where the author of the alcohol and drug report recommended it. Hence, magistrates were not entitled to impose treatment orders on anyone that had not been assessed as being a suitable candidate for mandated treatment.

(iii) Criminal Records of Offences (CROs)

Participants' CROs were also used to provide information about the nature and extent of participants' offending history. CROs are formal records of a person's offending history that are collected and held by the police. A copy of an offender's CRO was made available to Probation Officers when they were required to prepare an SER for an offender. CROs provide details of an individual's offending history. The information includes the dates and types of offence committed and the court disposition that was received. For the purpose of this research, each participant's age at the time of his or her first conviction was recorded, as were the number and types of offences committed in five year intervals. Any time (in days) spent incarcerated during the five year intervals was also recorded.

Each participant's offence was classified. The classification of index offences (i.e., the presenting offences that brought participants into this study) was based on work by Soothill, Francis and Fligelstone (2002) extended to include some offences that fell outside Soothill et al.'s clusters of offences (for example minor public order offences). This gave a total of 16 possible categories of offence. However, given the sample size these 16 categories were then collapsed into eight types of offending that covered all the index offences committed by the cohort. These eight categories were (i) drug offences, (ii) fraud and general theft, (iii) general violence, (iv) drink driving, (v) motoring, (vi) aggressive property, (vii) vehicle theft, and (viii) public order offences. For the final analyses, the index offences were categorised as either alcohol or drug related. This information was obtained from a review of the circumstances surrounding the presenting offence that were detailed as a matter of course in the SERs. In instances where participants were charged with both alcohol and drug related offences the offence that prompted police attention was deemed the identifying offence. For example, someone arrested for an intoxicated public order offence who was subsequently found to have cannabis in their possession was classified as an alcohol related offence. As regards information about participants' previous criminal behaviour, the number of prior convictions was recorded. Details as to whether a participant had a history of alcohol or drug related offending and whether participants had a history of violence were also recorded.

(iv) Level of Service Inventory – Revised (LSI-R)

Offenders were also assessed, by their probation officer, for their level of 'risk' of re-offending. This level of risk is assessed via the administration of the LSI-R

questionnaire (Andrews & Bonta, 1995). The LSI-R is a quantitative survey instrument that is designed to measure both the presenting needs of offenders and their risk of re-offending. The LSI-R takes account of offenders' characteristics and situational circumstances that are relevant to level of service decisions. The measure assesses both unchanging criminogenic factors, such as previous offending history, and more transient factors such as accommodation or drug use. The information obtained from the LSI-R is used to guide level of service decisions and treatment planning. Level of service decisions include decisions about the level of freedom that an offender requires or the amount of supervision that the offender needs to receive. The LSI-R consists of 54 items categorised as follows: criminal history, education/employment, financial, family/marital, accommodation, leisure/recreation, companions, alcohol/drug problems, emotional/personal, and attitudes/orientation. Most of the questions are yes/no questions but some questions require additional information. High scores are indicative of an increased need and risk of re-offending. The LSI-R includes tables that enable case workers to translate raw scores into levels of risk of recidivism. Low risk/needs are indicated by raw scores of 0 - 13, low to moderate risk/needs are between 14-23, moderate risk/needs are scores 24-33, medium high risk/needs are indicated by scores between 34 - 40 and high risk/needs are indicated by scores of 41-47. In regard to the psychometric properties of the LSI-R, Hollin, Palmer and Clark (2003) concluded that the LSI-R was both reliable and valid. They reported that test-re-test reliability, and inter rater reliability, had scores ranging from $r = .80$ to $r = .99$. In terms of validity, the LSI-R gives consistent scores with other measures of recidivism (Hollin et al., 2003). LSI-R scores, were available to the researcher. In the present sample, the LSI-R scores ranged from low (7/54) to high (42/54) with the majority of participants, 73 (48.7%), scoring in the low/moderate range.

Social Enquiry Reports (SERs), Alcohol and Drug Reports, Criminal Record of Offences (CROs) and Level of Service Inventories (LSI-Rs) were used to devise a measure of Recovery Capital through a theory-led thematic analysis (see stage 3). These reports and indices were also used to determine participants' level of Recovery Capital and to obtain potential predictive criteria such as demographic, drug use, treatment and prior criminal behaviour.

Procedure

Stage one: Gaining access to a cohort of offenders

Stage one involved gaining access to a cohort of people who had committed

alcohol and drug related offences. This required liaison with the Chief Probation Officer of the Jersey Probation and After Care Service and the Director of the Jersey Alcohol and Drug Service. Ethics approval from these organisations was obtained and the researcher was granted permission to access the necessary information. Ethics approval was also obtained from Edith Cowan University's Ethics Committee (no. 02/207).

The above participants were identified and the relevant information obtained via access to the Probation Service's integrated case management service (ICMS) and the database at the Alcohol and Drug Service. This process was initiated by an officer of the court examining the referral list for participants with a drug related offence who were referred for both an alcohol and drug report and an SER. The researcher was then provided with the corresponding criminal record numbers for these participants. All individuals whose details are entered onto ICMS are allocated a criminal record number (CRN). This CRN was then used to track the criminal and personal details of individuals while at the same time protecting their anonymity. This process ensured the confidentiality of the sample in that all identifying information was removed from the cases prior to their inclusion in the research study.

Stage two: Obtaining a data set

The second stage involved obtaining sufficient and appropriate data on the specified sample. Once the cohort had been identified, their criminal record numbers were used to search the ICMS for the relevant information and the following information was obtained:

- Social Enquiry Report
- The LSI-R score at the time of the index offence
- The date and details of the index offence
- The court date for the index offence and the sanction handed out by the court.

The relevant LSI-Rs were located from paper files kept at the Jersey Probation and Aftercare Service and were coded and photocopied. The list of participants identified by the court officer was given to the Alcohol and Drug Service. The administrator of this service then provided matched and anonymised reports to the researcher. These reports were matched to the SER reports by CRN number. It is noted that the names and any identifying information about the participants were removed from all documentation before the reports were subjected to any analysis.

Potential predictive variables that are associated with reducing recidivism such

as demographic information, drug use, treatment and prior criminal behaviour were also recorded for each participant. Demographic variables such as age, gender, marital status (in a relationship, married, single or divorced) and employment status (employed, not employed) were gathered from the information contained in the SERs and the Alcohol and Drug Assessment reports. Type of occupation was recorded for the individuals who were employed. Participants' occupation type was then categorised according to the Australian Standard Classification of Occupation (Australian Bureau of Statistics). The information about participants' drug use was recorded in addition to the information obtained from the Recovery Capital measure including participants' drug of choice and whether they were engaged in treatment at the time of their presenting offence. Participants' drug of choice was then coded into the categories of alcohol or illegal drugs. Criminal records were used to determine the length and nature of previous criminal behaviour of the participants.

Stage three: Designing a measure of Recovery Capital

The third stage was concerned with the development of a measure of Recovery Capital. At the time of this research a measure for Recovery Capital did not exist. This was confirmed by communication with W. Cloud, (2003), an American sociologist, who along with his colleague, R. Granfield, created the concept of 'Recovery Capital'. In order to examine the possible role of Recovery Capital in reducing recidivism, it was necessary to first establish criteria that represented Recovery Capital. As noted in the introduction, Recovery Capital is made up of four domains: Human, Social, Physical and Cultural Capital. Possible factors that contribute to an individual's Human, Social, Physical and Cultural Capital were identified. This was achieved by conducting a theory-led qualitative analysis on a sample of the SERs and alcohol and drug reports. The contents of the LSI-R were also reviewed so that salient pieces of information that were provided by the LSI-R could also be included in the analysis. The 'sample' was obtained by randomly selecting 30 individuals from the original sample of 150. This sample contained 24 men and 6 females. This sample group (referred to as the Review Group) was then used to develop the measure for Recovery Capital. The information contained in these participants' reports was sorted into themes that potentially related to Recovery Capital. This resulted in establishing the criteria for Human, Physical, Cultural and Social Capital. The theory-led thematic analysis continued until no additional new information for each of the themes was found. Once the information had been sorted into the themes of Human, Social, Cultural and Physical Capital, common

categories within these themes were then identified. Human Capital contained the categories of education, development, childhood attachment, knowledge and mental ability, personal characteristics, mental health, adverse life experiences, substance use and employment. Social Capital contained the categories of family of origin, family of procreation, support from agencies, friends support network, accommodation and level of community functioning. Cultural Capital was based on the following categories - connection to Jersey, community connection, connection to drug using community, deviance, permanency in Jersey and type of accommodation. Physical Capital essentially included tangible assets such as income and financial situation.

Development of criteria for Human Capital

Human Capital was conceptualised as the knowledge, skills, educational credentials, health and other personal qualities that individuals rely on to negotiate daily life. In this instance Human Capital was also based on individuals' developmental experiences, their ability to form and maintain attachments, the extent and nature of their drug use and employment status.

The education component of Human Capital included whether a person was literate and whether he or she had continued with education until the age of 15 years. Included was the attainment of qualifications at school and whether the individual had embarked on and completed formal education after school. Also reviewed was whether the participants had exhibited behavioural problems at school (e.g., truancy, persistently disruptive in class, contact with educational psychologist). A person's intellectual functioning was also considered, with a search being made for any specific mention of whether the participants had brain damage or low IQ.

Developmental experiences attempted to measure the quality of a person's early life experiences. The information reviewed included the stability of each participant's childhood. A participant's childhood was considered stable if violence, sexual abuse, an acrimonious separation, death of a parent and parental misuse of substances were absent. Consideration was also given to the quality of the person's relationship with his or her parents and/or significant others. It was assumed, unless otherwise stated (i.e., individuals spoke positively about their relationship with their parents or significant others), that individuals who had experienced a punishing, unpleasant, uncaring, hostile or indifferent relationship with their parents and/or significant other, did not experience a rewarding relationship. Any suggestion that individuals had, during their childhood, received nurturance in the form of affection, comfort or support from their parents

and/or a significant other, resulted in individuals being assessed as experiencing a rewarding relationship with their parent/carer as a child. In the instances where the reports indicated that the person had experienced a "normal" or "uneventful" childhood (and no specific details about any instability or mistreatment in early life were mentioned), it was assumed that the participant had experienced a stable childhood with rewarding and appropriate attachments with significant others.

A person's ability to form adult attachments was assessed by looking for information about whether he or she established and maintained relationships with others or whether he or she tended to operate with a more detached and remote interpersonal style. Information about contact with others was obtained from the SERs and the Alcohol and Drug reports, as was information about the length of these relationships. For example, someone whom maintained regular contact with a family member (other than a parent), a friend or a partner was considered to be able to form adult attachments. If these attachments had been in existence for more than a year it was assumed that the person 'maintained' (i.e., nurtured and pursued their relationships with others) these attachments. The quality of their relationship with a partner was also noted. Persons who were victims or perpetrators of physical and/or emotional abuse in their adult relationships were also identified. Individuals who did not have any ongoing regular contact with any significant others or, as a result of their interpersonal style struggled to establish appropriate relationships with others, were considered to be socially isolated.

In terms of personal attributes, a person's ability to manage everyday life, to set goals commensurate with his or her own capacity, to have insight into his or her problems and to have empathy with others, was examined. Managing everyday problems looked at whether individuals were able to cope with the general everyday requirements of daily living. Empathy was assessed by a review of the participants' attitude towards his or her offending and his or her treatment of others. If the participant indicated a feeling of remorse about his or her offending and antisocial behaviour or indicated some concern about the impact that his or her substance use was having on his or her family, then it was deemed that he or she had the capacity to be empathic about the needs of others. If the reports indicated that the participant showed an awareness of the relationship between his or her substance use and his or her offending, he or she was considered to have insight.

Participants' presentation at the time of their interview and their physical and mental health were also included in Human Capital. The reports routinely noted the participants' presentation at the time of their interview and if the individual was, for example, sober, communicative, alert and orientated during their interview, he or she was assessed as having good self-presentation. Those considered to have poor-self presentation were those who were intoxicated, uncommunicative and/or had poor hygiene. The presence of chronic medical conditions (e.g., Hepatitis C, Cirrhosis) or acute conditions (e.g., broken leg, back injury) were also noted. In terms of assessing participants' mental health the presence of a mental health diagnosis other than substance use (e.g., depression, personality disorder, anxiety, schizophrenia) was noted. Participants' previous history of mental health problems, whether they had received psychological or psychiatric interventions, and whether they had engaged in self harm or attempted suicide, were also recorded. If the reports did not make reference to self harming behaviour or attempted suicides, then it was assumed that the participant did not engage in these behaviours.

Participants' ability to cope with stress and frustration without the use of substances or aggression was also assessed. A person who had strategies other than aggression or the use of substances to cope with stress and frustration was deemed to cope well. Such alternative strategies included accessing support from others, exercise and pursuing meaningful activities.

Participants' substance use was measured in terms of age of onset, level of dependence, duration of problematic use, contact with the criminal justice system prior to 18 years of age and their involvement in selling drugs. Problematic use referred to those individuals who, for a period of over two years, had encountered problems as a result of their substance use. In general these problems included relational difficulties, loss of employment and repeated involvement with the criminal justice system as a result of substance use. Participants were also assessed to establish whether they were substance users or whether they also sold drugs to fund their habits. This information was gleaned from the alcohol and drug reports and the participants' offending history. If a participant had been convicted, or was presently charged with a drug dealing offence, then he or she was assumed to be a user-dealer.

Adverse adult life experiences were also included in the measure for Human Capital. Adverse adult life experiences included being raped or sexually assaulted as an adult. They also included the death or chronic illness of a significant other. If the reports

did not refer to any adverse adult life experiences then it was assumed that the participant had not experienced any.

Employment status was also considered to be an important factor when assessing a person's Human Capital therefore participants' employment status and history were also obtained. Employment status i.e., employed or unemployed, was noted. The frequency of unemployment was also assessed. Participants were considered 'frequently unemployed' if they had been unemployed for more than 50% percent of the past year. Permanency in employment was measured by the time they had spent in their current job. If they had been employed by the same employer for over a year, they were deemed a permanent employee. Participants were considered to have a positive attitude to their work if they expressed enjoying their work or articulated an interest in furthering their expertise in their chosen profession. Participants' recent work history was also noted. They were deemed to have a stable current work history if they had been in the same job for six months or more. Employment information about participants also included whether they had lost work through their substance use.

Development of criteria for Social Capital

Social Capital was concerned with a person's membership within a social group. The resources obligations and benefits of the social groups were considered in terms of the 'stock' that they provided for individuals to improve their lives. In this instance Social Capital was conceptualised as an individual's support networks (social and familial), their accommodation and their contact with support agencies.

Information was obtained as to how frequently participants had contact with their family of origin, whether these relationships reinforced their current problematic lifestyle and whether the participant viewed these relationships as positive. If a participant maintained regular contact with a parent who was involved in illegal activities and/or there was evidence of problematic substance use, then it was assumed that this relationship reinforced the participant's problematic lifestyle. Participants whose family of origin did not support their criminality were viewed as having relationships with their family of origin that did not reinforce their problematic lifestyle.

Participants' relationships with his or her family of procreation and his or her current relational circumstances were assessed. This required determining whether the participant was satisfied with his or her current relational circumstances. If the reports indicated that the participant was in a supportive and stable relationship, or was content with being single, it was assumed that he or she was satisfied with his or her relational

circumstances at the time of his or her offence. It was also noted whether the participant had, within the previous six months, experienced an acrimonious separation and/or whether there was any indication of poor family functioning (e.g., recent involvement of the police domestic violence unit or children's services). Information about the presence of children, and whether individuals lived as a member of a family unit, i.e., lived with their children or with their partner's children, was noted. Spouses' involvement in any criminal activities (illegal drug use, involvement with criminal justice system) was also recorded.

Aspects of a person's employment were also deemed to be important components of Social Capital. However, the focus on employment in the Social Capital section concentrated on the relationships that an individual gained through their work, i.e., the benefits that an individual reaped as a result of being embedded in a employment network that adhered to positive social norms and encouraged compliance to these norms. In other words, the amounts of 'stock' or resources that employment offered an individual were assessed. In this regard, participants' credibility in the employment sector was considered. If participants had a reputation as a reliable employee and did not have a recent history of employment difficulties (e.g., being intoxicated at work, recent involvement with the criminal justice system that impeded their ability to work), they were considered to have credibility to protect. The participants' working relationships and their attitude to their work were also recorded. If the employer had provided a positive reference for them, or there was no mention of strained relationships at work, participants were considered to have smooth working relationships.

In determining an individual's Social Capital, participants' contact with the alcohol and drug services, and other support agencies, such as Alcoholics Anonymous and Narcotics Anonymous, was also reviewed. Contact with a support agency was considered to be an additional area of support that participants could use to address the problems encountered by their substance misuse. Participants were considered to have had appropriate contact with a support agency if they had a history of problematic substance use and had sought assistance from a support agency. Participants whose substance use had only recently (within six months) begun to cause them problems, but who had not yet made contact with a support agency, were also considered to have had appropriate contact with a support agency. Participants whose substance use was not causing them any ongoing difficulties, and who had not contacted a support agency,

were also considered to have had appropriate contact with a support agency. Participants who had experienced significant problems related to their substance use (i.e., contact with the criminal justice system, relational or employment difficulties, problems of dependence) but who had not contacted a support agency were not considered to have had appropriate contact with a support agency.

The final sections of Social Capital looked at participants' social networks and their accommodation and general community functioning. In regards to participants' social networks, the criminal involvement of their friends and acquaintances was reviewed. The propensity to associate with individuals who used illegal drugs was also explored. Participants who were entrenched in illegal drug use (i.e., were regular habitual users who had established networks within the illegal drug using community) were described as associating with individuals who took illegal drugs. These individuals differed from participants who used illegal substance, but whose main contact with other illegal drug users was only when obtaining illegal drugs, as opposed to socialising with such individuals.

In terms of accommodation and functioning in the general community, the stability of participants' recent (within the previous month) accommodation was assessed. Individuals who had changed their accommodation (and this included being remanded in prison) were not considered to have a recent history of stable accommodation. Participants were considered to manage their finances effectively if they had sufficient funds for food and accommodation. Individuals who had significant debts and/or no formal income were not considered to manage their finances effectively. Individuals who had a regular income (e.g., wages or welfare support) and who did not have significant debts were considered to manage their finances effectively. The eligibility of participants to access welfare and treatment services was also assessed. Individuals living in Jersey are only eligible for welfare services if, when employed, they pay a social security stamp duty. Individuals who were new to the island and/or who held casual positions are unable to access welfare services. Evidence of constructive leisure pursuits was also explored. Individuals who had a hobby or interest or participated in a sport were considered to have a constructive leisure pursuit.

Development of criteria for Cultural Capital

Cultural Capital embodied the individual's familiarity with cultural norms and the ability to act in one's own interest within those norms. Cultural Capital also included values, beliefs, dispositions, behaviour patterns and other personal qualities that

emanated from membership within a particular culture. In effect, Cultural Capital is one's sense of acceptance and belonging within a cultural group and is akin to the concept of 'insider' or 'outsider' status. In this instance the participants' connection to Jersey, and their connection to the community including links to 'deviant lifestyles', were examined. Participants' connection to Jersey was assessed by the amount of time they had spent in Jersey, including whether they were born and educated in Jersey, and whether their family of origin or procreation lived in Jersey.

Participants' connection to the community was assessed by the presence of acquaintances and established adult networks in Jersey. Engagement in an organised local activity was also used as a means of assessing participants' connection to the community. Organised local activities included being a member of a local sporting club, local charity or interest group. Involvement in a sport or hobby was not considered to be an organised activity unless it provided participants with a sense of belonging to a group or club and sharing an expressed common interest with others. The native language of participants was also noted. English is the native language of Jersey, thus it was considered that participants whose first language was not English would be less likely to feel a strong sense of connection to the overall community. Participants' connection to a drug using community was also measured. This was assessed by examining whether participants socialised almost exclusively with other substance users, whether they spent most of their time intoxicated and whether they had a long standing (over three years) connection with other drug users in Jersey. In terms of assessing participants' involvement in deviant culture their offence history was explored. Participants were assessed as to whether they had a history of deviance or behavioural problems during their adolescence and as to whether they had committed criminal offences that were unrelated to their substance use. Whether participants had less than 10 convictions, and had ever been incarcerated, was also assessed. Participants' permanency in Jersey was measured by whether participants were employed in Jersey and had a permanent address in Jersey. Participants were assumed to have a permanent address if they regarded Jersey as their home and were not homeless. Participants' level of accommodation was also considered to be indicative of their Cultural Capital. At present, Jersey law states that only people who are born and raised in Jersey, or who have lived on the island for over 20 years, are permitted to buy a house in Jersey. It is therefore assumed that a person's type of accommodation is likely to have some bearing on his or her sense of cultural belonging. Participants' accommodation was rated on a sliding scale with

individuals who owned their own house receiving the maximum number of accumulated points (5) and individuals who were homeless receiving no points. Individuals who lived in a hostel, on a campsite or who were temporarily residing with a friend, received one point. Individuals living in temporary, but longer term accommodation, such as a guest house, sharing with friends or family, received two points and those living in a long term rental property received three points.

Development of criteria for Physical Capital

Physical Capital is often referred to as economic or financial capital. It refers to income, investments, property and other tangible assets that can be converted to money. In effect, Physical Capital is literally the financial assets of the individual. In this study Physical Capital was gauged by whether participants owned a house, had their own business and had some savings. Participants' income was determined using information from the SFR reports. Participants who earned in the region of £10,000 - £14,999 per annum received one point, those who earned £15,000 - £24,999 received two points and participants earning over £25,000 received three points. Participants' financial situation was also assessed in terms of the presence of debts and whether participants were reliant on welfare assistance.

Recovery Capital Measure

A questionnaire comprising 100 questions (see Appendix 1) was developed. Guidelines for scoring the questionnaire were also produced (see Appendix 2). The questions were scored using ones and zeros. Individuals with the most Recovery Capital obtained the highest scores. The questionnaire was then applied to 15 of the participants in the Review Group. The answers to the questionnaire were obtained by consulting the SFRs, Alcohol and Drug reports, LSI-R forms and the criminal record information for the 15 participants in the Review Group. In order to assess the reliability of this questionnaire, the same sample of 15 participants was additionally assessed by two independent scorers. Items that were difficult to score, or that showed a significant discrepancy, were then discussed in a three way meeting with all of the scorers. An attempt was made to establish consensus scores for the items showing a discrepancy. Contentious and difficult to score items were reworded for the final version of the questionnaire and, where necessary, clearer guidelines were provided for scoring the questionnaire. The amended independent scores were then analysed. Final analysis of the inter rater reliability was 0.9.

A spearman's rho correlation was undertaken to establish whether the component parts of Recovery Capital, namely Human, Social, Cultural and Physical Capital, contributed to Recovery Capital scores. The results of this analysis showed that each part contributed to the overall score of Recovery Capital and each component part also contributed an individual factor as well see Table 1. Each of the correlations for the component parts of Recovery Capital was statistically significant at $p = 0.001$. All scales showed a medium to high internal consistency: Human Capital ($n = 45$) $\alpha = .841$, Social Capital ($n = 22$) $\alpha = .673$, Cultural Capital ($n = 25$) $\alpha = .760$ and Physical Capital ($n = 8$) $\alpha = .739$. The Recovery Capital scores were correlated with the LSI-R intake scores. This correlation was also found to be significant $r = 0.68$ $p < 0.01$. Therefore it is considered that this correlation bestows face validity on this measure of Recovery Capital.

Table 1

Spearman rho correlation between component parts of Recovery Capital

Spearman's rho	Human	Social	Cultural	Physical	Total Recovery Capital
Human	1.000	0.559*	0.426*	0.463*	0.795*
Social		1.000	0.566*	0.704*	0.877*
Cultural			1.000	0.475*	0.769*
Physical				1.000	0.769*
Total Recovery Capital					1.000

* $p = 0.01$

Stage four: Obtaining Recovery Capital Scores

The fourth stage was the determination of Recovery Capital scores for the sample. The questionnaire was used to assess the main, and separate, sample of 150 cases for characteristics of Recovery Capital. The SERs, Alcohol and Drug Reports, CROs and LSI-Rs were used to obtain answers to the Recovery Capital questionnaire. All cases were given a total score out of 100 and a score for each of the four components of Recovery Capital.

Stage five: Obtaining outcome data

The fifth stage was concerned with obtaining outcome data for the sample. The outcome data were accessed after all the previously noted intake data and after the subsequent analysis was completed. Thus, the researcher was blind to the outcome data at the time of collating the intake data including the development of the recovery capital

measure and the derivation of recovery capital scores. Outcome data (days to re-offending) were obtained from the Jersey Probation and Aftercare Service's database, the Integrated Case Management System (ICMS). Any significant re-offending is notified to the Probation and After Care Service, therefore their ICMS database was an ideal place to track the re-offending behaviour of the cohort. Additionally, because Jersey is an island with a stable population, the 'capture' of the follow-up group was high. Days to re-offending were calculated by manually working out the number of days between the date of participants' court appearance for their presenting offence and the offence date of their following offence. Additional information pertinent to the 18 month follow up period was also recorded. This information included any time spent incarcerated (in days) and the numbers of offences committed during the 18 month follow up period.

Stage six: Data analysis

The sixth and final stage involved the statistical analysis of the obtained data. This was driven by the previously determined hypotheses. Essentially the analysis involved determining the factors that were associated with whether an individual re-offended in the 18 month follow-up period. Initially the frequencies of all the variables were examined and based on these frequencies, the data were collapsed. The sample size in this study was relatively small and a significant number of variables were included in the study design. Therefore, exploratory analysis was undertaken to establish the variables that were statistically significantly associated with re-offending. In the first instance chi square analysis was undertaken on potentially predictive demographic (e.g., age, gender, employment status) and historic and current criminological characteristics (e.g., number and type of previous offences, time in prison and nature of presenting offence). Levels of Recovery Capital, LSI-R scores, court disposition and drug use and drug treatment, were also analysed using chi square to identify possible significant associations with recidivism.

These variables were then subjected to further analysis, in the form of survival analysis to determine their impact on time (days) to re-offending. The main outcome measure in survival analysis is the time it takes for an event to occur (e.g., re-offend, not re-offend). In instances when the event did not occur i.e., a participant did not re-offend, the data were categorised as censored. Survival analysis is a statistical technique that takes account of these censored data by considering that offenders have been at risk all the time (18 months) they were observed.

Kaplan-Meier analysis (Kaplan & Meier, 1958) and Cox regression (Cox & Oakes, 1984) models were used for analysis of the time to event. The Kaplan-Meier analysis is used for categorical data and the results of this type of analysis can estimate differences in survival probabilities over time. However, survival analysis does not provide an estimate of risk nor does it adjust for covariates. Cox regression analysis can however, estimate the magnitude of the effect of individual variables and how much the hazard rate (estimate of risk) is expected to change as a consequence of changing the individual variables. The hazard rate is a function of time, not a probability. Cox regression can also be used for both categorical and continuous data and in the current study it was used to describe the linear association of Recovery Capital and its component parts with outcome.

In the current study survival curves (Kaplan Meier analysis) were calculated for all variables and log rank tests were undertaken to compare survival curves for these variables. Given the sample size and the number of variables, and thus limitations in power, an apriori decision was made to set the statistical significance of the log rank tests to $p < 0.10$. This level was used to determine those variables that were included in an initial Cox regression model. The assumption of proportional hazards was tested before entering variables into the model. Stepwise variable selection (backward elimination) was undertaken on the variables that were included in the initial Cox regression model. By this means it was possible to identify those factors that were most statistically associated with outcome and assess the comparative strength of such individual variables. It was also possible to assess the individual impacts of the component parts of recovery capital. Additionally assessment was made of the inter-relationship between Recovery Capital variables, LSI-R score and clinicians' recommendation for treatment.

Chapter Three Results

Introduction

The results of this study are outlined below. In the first part of this chapter descriptive information about the study sample is provided. The descriptive statistics include demographic, criminological and outcome information. In the second section of the chapter the hypotheses of the study are addressed and the results of the statistical analyses presented.

Part 1

Descriptive Statistics of the sample

As can be seen from Table 2, the sample consisted of 150 individuals of whom 122 were male (81%) and 28 (19%) female. The age range of the sample was 18 to 65 years with the mean age being 32 (*SD* 10.3yrs). Seventy two (48%) were employed. Of those unemployed, 43 (28.6%) were receiving a state benefit. Of those in employment, 19 (26.4%) worked in a clerical position, 34 (47.2%) had a trade and 19 (26.4%) worked in unskilled manual jobs. The sample were comparatively well educated with 88% of them having completed formal schooling.

Table 2

Demographics of the sample

Demographics	<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Gender				
Male	122	81.3		
Female	28	18.7		
Age	150	100.0	32.0	10.4
≤ 25 yrs	47	31.3		
26-36 years	50	33.4		
≥ 37 years	53	35.3		
Education				
≥ 6 years	150	100.0		
Completed 10 yrs	132	88.0		
Completed further education	40	26.7		
Marital status				
Single	81	54.0		
Married	26	17.3		
In relationship	30	20.0		
Divorced/separated	13	8.7		
Employment status				
Employed	72	48.0		
Unemployed	78	52.0		

The drug use characteristics of the sample are outlined in Table 3. As can be seen, alcohol was the drug of choice for the majority of the sample (59%), with heroin being the second most popular drug of choice. Forty three (29%) participants had used cannabis under the age of 15 years and 26 (17%) had used heroin under the age of 18. At the time of their presenting offence, 102 (68%) were assessed as being drug dependent. The majority (84%) of the sample had experienced over two years of problematic use.

Table 3

Drug use characteristics of sample

Drug of choice	N	%
Alcohol	89	59.3
Heroin	46	30.7
Cannabis	7	4.7
Amphetamine	2	1.3
Polydrugs	3	2.0
Ecstasy	1	0.7
Cocaine	1	0.7
Solvents	1	0.7

The historical, criminological, characteristics of the sample are shown in Table 4. As can be seen, 68 (45%) of the sample had, by the age of 18, been convicted of a crime. The youngest age for a first conviction was 10 years and 54 was the oldest. Just over half (56%) of the sample had recorded their first criminal conviction by the age of 19. The number of previous convictions ranged from 0-211 with the mean number of previous convictions being 13.2 (*SD* 22.8). Seventy six (50.7%) of the sample had over six previous convictions and a further 25% of the sample had 16 or more previous convictions.

Additional analysis of the sample's previous offending revealed that the mean number of offences committed under the age of 16 was 1.5 (*SD* 4.9). The range in the number of convictions under the age of 16 was 0-34 with 90% of the sample having three or less convictions under the age of 16. Forty five percent of the sample had spent time in prison with mean length of imprisonment for the whole sample being 21 weeks (*SD* 54.1). The range of weeks spent in prison was 0-396 with 20% of the sample having spent over 18 weeks in prison.

Table 4

Historical criminological characteristics of the sample

Criminological characteristic	N	%	M	SD
No. of convictions under 16 years	150	100.0	1.5	4.9
Age of first conviction	150	100.0	21.9	8.7
≤18 years	68	45.3		
≥19 years	82	54.7		
Number of prior convictions	150	100.0	13.2	22.8
0	28	18.7		
1-5	46	30.6		
≥ 6	76	50.7		
Type of prior convictions				
Drug related convictions	69	46.0		
Alcohol related convictions	112	75.0		
Convictions for violence	64	42.7		
Time spent in prison (weeks)	150	100.0	21.5	54.1
0 weeks	89	59.3		
1-12 weeks	24	16.0		
≥13 weeks	37	24.7		

The current criminological characteristics of the sample are illustrated in Table 5. As can be seen, the mean age at the time of the presenting offence was 32 years (*SD* 10.2). The range for the number of presenting offences was 1-24 with 93.3 % having six or less presenting offences.

Table 5

Current criminological profile

Current criminological profile	N	%	M	SD
Age at current offence	150	100.0	32.3	10.2
No. of presenting offences	150	100.0	2.8	3.2
1	59	39.3		
2	38	25.4		
≥3	53	35.3		
Presenting offence	150			
Alcohol related	93	62.0		
Drug related	57	38.0		

In order to classify the presenting offences as either alcohol or drug related, the details of the offence were obtained from the SERs. It was clear from the nature of the offending and/or circumstances of the arrest whether the index offence was alcohol or drug related. Only eight participants were charged with both alcohol and drug related offences. In these instances the SERs were reviewed and the circumstances of the arrest

dictated the classification. Of interest is the fact that 62 % of the presenting offences were alcohol related. This is of particular interest because most therapeutic jurisprudence interventions are targeted at currently illegal drug related offending. However, in this sample, only 38% of the presenting offences were drug related.

As can be seen from Table 6, illegal drug offences were the presenting offence for 42 (28%) of the sample and public order offences were the second most frequent offence, with 36 (24%) of the sample offending in this manner. Examination of the details of the presenting offences revealed that only 18 (12%) of the sample had a violent presenting offence

Table 6

Type of presenting offence

Presenting offence type	N	%
Drug offences	42	28.0
Public order	36	24.0
Fraud and general theft	18	12.0
General violence	18	12.0
Drink driving	26	17.3
Motoring	5	3.3
Aggressive property	3	2.0
Vehicle theft	2	1.3

The Level of Service Inventory- Revised (LSI-R) scores for the sample were collapsed into the scoring categories that were stipulated by the LSI-R. As can be seen from Table 7, the range of LSI-R scores for the present sample was 4-42 with the mean LSI-R score for the current sample being 20.8 (*SD* 8.40). This is considered to indicate a low to moderate risk of re-offending. The majority of the sample (67.4%) was either in the low moderate or low risk of re-offending group.

Table 7

Level of Service Inventory (LSI) scores by risk categories

LSI-R Scores	N	%	M	SD
Sample	150	100.0	20.8	8.40
Low 0-13	32	21.3		
Low / Moderate 14 -23	73	48.7		
Moderate 24 - 33	28	18.7		
Moderate / high 34 - 40	16	10.7		
High 41 - 47	1	0.7		

The sample's Recovery Capital scores were collapsed into three categories, high (68+), medium (55-67) and low (54 or less). The range for Recovery Capital scores was 1-93, the mean being 60.8 (SD 13.3).

Table 8

Recovery Capital scores

Recovery Capital scores (max = 100)	<i>N</i>	%	<i>M</i>	<i>SD</i>
Recovery Capital	150	100.0	60.8	13.3
Low ≤ 54	52	34.7		
Medium 55-67	48	32.0		
High ≥ 68	50	33.3		

The individual component parts of recovery capital were collapsed into two categories. The cut off was established by using a score that gave the best median split (that is closest to 50/50). The Human Capital scores obtained by participants ranged from 12 – 45 with 25% of the sample scoring 28 or less and 25 % scoring over 38. The mean score for Human Capital was 32.3 (SD 6.7).

Table 9

Human Capital scores

Human Capital scores (max=45)	<i>N</i>	%	<i>M</i>	<i>SD</i>
Human Capital	150	100.0	32.3	6.7
Low ≤ 33	81	54.0		
High ≥ 34	69	46.0		

The frequencies for Social Capital scores are outlined in Table 10. The range of Social Capital scores obtained by participants was 4-21 with 25% of the sample scoring 9 or less and 25 % scoring over 14. As can be seen from Table 10 Social Capital scores were collapsed into two groups - those who scored 13 or over and those who scored 12 or below. The mean overall score for Social Capital was 12.0 (SD 3.4).

Table 10

Social Capital scores

Social Capital scores (max=22)	<i>N</i>	%	<i>M</i>	<i>SD</i>
Social Capital	150	100.0	12.0	3.4
Low ≤ 12	84	56.0		
High ≥ 13	66	44.0		

The frequencies for Cultural Capital are illustrated in Table 11. The range in scores was 4-24 with 25 being the maximum score. Examination of the frequencies showed that 20 % of the sample scored 10 or under. The mean score for Cultural Capital was 13.9 (*SD* 4.2).

Table 11

Cultural Capital scores

Cultural Capital scores (max=25)	<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Cultural Capital	150	100.0	13.9	4.2
≤ 13	75	50.0		
>14	75	50.0		

The scores for Physical Capital are outlined in Table 12. The range of scores for Physical Capital was 1 – 8, with 87% scoring four or less. The overall mean score was 2.6 (*SD* 1.8).

Table 12

Physical Capital scores

Physical Capital scores (max=8)	<i>N</i>	<i>%</i>	<i>M</i>	<i>SD</i>
Physical	150	100	2.6	1.8
≤ 2	79	52.7		
≥ 2	71	47.3		

In Table 13 the court dispositions that were allocated for the presenting offences are outlined. As can be seen, 21 (14%) of the sample received a custodial sentence. The most common court disposition was a probation order with 25.3 % of the sample receiving this disposition.

Table 13

Court disposition for presenting offence

Court disposition of current offence	<i>N</i>	<i>%</i>
Probation order	38	25.3
Probation order with treatment	25	16.7
Community service order	21	14.0
Prison	21	14.0
Binding over order with treatment	21	14.0
Binding over order	15	10.0
Fine	9	6.0

As can be seen from Table 14, 46 (30.6%) of the sample received mandated treatment (binding over order with a condition of mandated treatment or probation order with a condition of mandated treatment) for their presenting offence.

Table 14

Number of individuals who received mandated treatment

Mandated treatment	N (150)	%
Yes	46	30.6
No	104	69.3

It is pertinent to note, as outlined in Table 15, that at the time of their presenting offence, 59 (39.3%) participants were already engaged in some form of treatment intervention. Of the individuals engaged in treatment at the time of their presenting offence, around approximately half (30 out of 59) were seeking assistance for alcohol related problems and the remainder were seeking help for other drug related problems. When mandated treatment is included, the number of participants engaged in treatment post sentencing increased to 85 (43%).

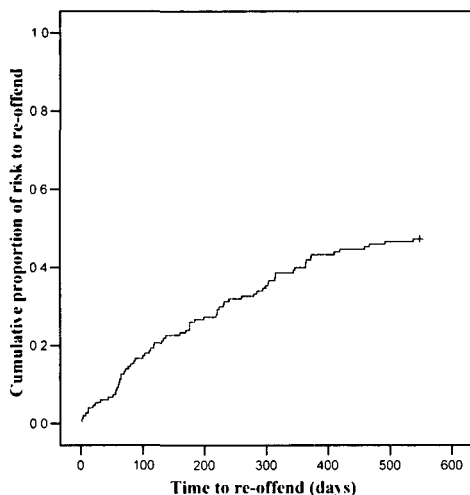
Table 15

Number of people in voluntary and mandated treatment

In voluntary treatment at time of presenting offence	N	%
Yes	59	39.3
No	91	60.7
In treatment after offence (voluntary or mandated)		
Yes	85	43.3
No	65	56.7

Descriptives for 18-month follow up

Of the 150 persons involved in the study, 71 (47.3%) re-offended during the 18 month follow up period. The mean time for the sample to re-offend was 377.6 days or approximately one year (out of a maximum period of re-offending of 548 days). The time to re-offending in days is outlined in Figure 1.

Figure 1**Survival curve for time to re-offend (days)**

As can be seen from the examination of Figure 1, there is a steady cumulative incidence of re-offending over the first 300 days. However, this flattens out at around the one year mark with new offending after that time becoming increasingly rare. This is further illustrated in Table 16 where the cumulative percentage of offenders at 90 day intervals is outlined.

Table 16

Days to re-offend for sample

Time to re-offend	Cumulative no. of offenders	Cumulative % re-offenders
90	25	23.4
180	39	54.9
270	49	69.0
360	60	84.5
450	67	94.4
540	71	100.0

The total numbers of convictions during the 18 month follow up period are outlined in Table 17. The range of the number of convictions during the follow up period was 0 – 18. Of the 71 who re-offended, 52 (73.2%) had three or less convictions.

Table 17

Number of convictions during 18 month follow up

No. of convictions	N	%	M	SD
	150	100	1.39	2.4
0	79	52.7		
1 – 3	52	34.7		
>3	19	12.7		

As can be seen from Table 18, the majority (69.3%) of the sample did not spend any time in prison during the 18 month follow up. The time in prison during the follow up period ranged from 0 – 540 days with 17 (11%) of the sample spending over 112 days in prison. The one person who was in prison for 540 days re-offended within eight days of their presenting offence. Due to the severity of that offence, the individual was remanded in custody and eventually received a significant prison sentence from the Royal Court (Supreme Court).

Table 18

Amount of time spent in prison during 18 month follow up

Days in prison	N	%	M	SD
	150	100.0	37.2	95.7
0	104	69.3		
7 – 28	13	8.6		
> 28	33	22.0		

Part 2

Hypothesis Testing

Hypothesis 1

This research was driven by four hypotheses. The first of these was that there would be a positive association between the level of Recovery Capital and outcome with higher levels of Recovery Capital being associated with better outcome (that is longer time to re-offending). In order to address the first hypothesis, the Recovery Capital scores for the sample were calculated (as shown in Table 8). Following this, Recovery Capital scores were crosstabulated with days to re-offend. These results are outlined in Table 19.

Table 19

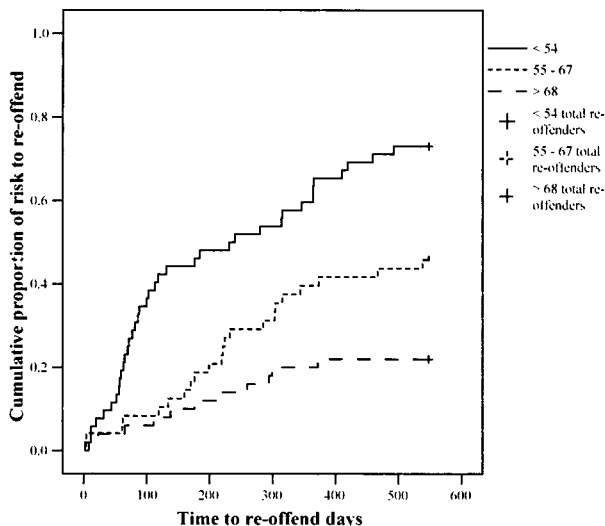
Recovery Capital and outcome (re-offend did not re-offend)

Outcome		Recovery Capital		
		≤ 54	55 - 67	68 ≥
Did not re-offend	N	14	26	39
	%	26.9	54.1	78.0
Re-offended	N	38	22	11
	%	73.1	45.8	22.0
Total	N	52	48	50
	%	100.0	100.0	100.0

The results of the chi square statistical analysis (χ^2 (2, N = 150) = 26.74, $p = 0.001$) showed that Recovery Capital was significantly associated with re-offending with more persons with lower Recovery Capital re-offending. Of the individuals assessed as having high levels of Recovery Capital, 11 (22%) re-offended whereas of the individuals assessed as having low Recovery Capital, 38 (73.1%) re-offended.

These results were further analysed using survival analysis. As can be seen by looking at the survival curves in Figure 2, there was a steep increase in re-offending behaviour in the low Recovery Capital group as compared to the higher levels of Recovery Capital (Log rank = 29.74, $df = 2$, $p = 0.001$). Thus, Recovery Capital was significantly associated with outcome.

Figure 2
Time to re-offend survival curves for levels of recovery capital



In Table 20, the mean time to re-offending for each of the categories of Recovery Capital and the cumulative number of offences in 90 day intervals are outlined. As can be seen, the mean number days to re-offend for individuals with high levels of Recovery Capital was 194.8 days longer than for individuals with low levels of Recovery Capital. Table 20 also shows that nearly half (47.3%) of the individuals with low levels of Recovery Capital had re-offended within 90 days. As well as re-offending faster, individuals with low Recovery Capital also re-offended more than individuals with higher level of Recovery Capital. Seventy three percent of individuals with low Recovery Capital re-offended as opposed to 22% of individuals with a high level of Recovery Capital.

Table 20

Recovery Capital scores with 18 month outcome

Recovery Capital scores	No. re-offending	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
			90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Low	38/52	272.0	47.3	63.1	71.2	81.6	94.7	100.0
Medium	22/48	399.5	18.2	40.9	77.2	86.4	90.9	100.0
High	11/50	466.8	27.3	54.5	72.7	90.9	100.0	100.0

In light of these results, hypothesis one was supported. There was a significant association between levels of Recovery Capital and outcome.

Hypothesis 2

The second hypothesis was that the constituent components of Recovery Capital namely Human, Social, Cultural and Physical Capital, would not be individually influential in determining outcome. The component parts of Recovery Capital were crosstabulated with days to re-offend and then further analysed using survival analysis.

Human Capital

In Table 21 the number of persons who offended and did not re-offend within high and low levels of Human Capital are shown. As can be seen from this Table, more individuals with low levels of Human Capital re-offended than did individuals with high levels of Human Capital.

Table 21

Human Capital and outcome (re-offend did not re-offend)

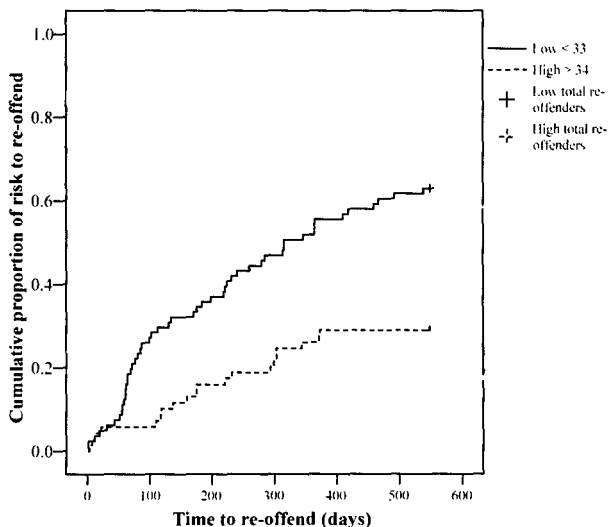
Outcome		Human Capital	
		≤33	≥34
Did not re-offend	<i>n</i>	30	49
	%	37.0	71.0
Re-offended	<i>n</i>	51	20
	%	63.0	29.0
Total	N	81	69
	%	100.0	100.0

The results of the chi square statistical analysis (χ^2 (1, N = 150) = 17.26, $p = 0.001$)

showed that Human Capital was significantly associated with outcome. These results were further analysed using survival analysis. See Figure 3 for the results of this analysis.

Figure 3

Time to re-offend survival curves for high vs low human capital



As can be seen from examination of these survival outcome data, Human Capital was associated with outcome. Figure 3 indicates that during the 18 month follow-up, participants with low Human Capital were at higher risk of reoffending compared to subjects with high Human Capital (Log rank = 16.96, df 1, $p = 0.000$).

In Table 22 the mean time to re-offending for each of the categories of Human Capital and the cumulative number of offences in 90 day intervals are outlined. The median point for days to re-offend was 315 days. As can be seen from Table 22, individuals with low levels of Human Capital re-offended on average quicker than their counterparts with high levels of Human Capital.

Table 22

Human Capital scores with 18 month outcome

Human Capital	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Low	321.0	37.3	54.9	70.6	82.3	92.2	100.0
High	444.0	20.0	55.0	65.0	90.0	100.0	100.0

Social Capital

In Table 23, the number of persons with the high and low levels of Social Capital who did and did not re-offend are shown. As can be seen, 50 (59.5%) of individuals with low levels of Social Capital re-offended whereas 21 (31.8%) of persons with high levels of Social Capital re-offended.

Table 23

Social Capital and outcome (re-offend did not re-offend)

Outcome		Social Capital	
		≤ 13	≥ 14
Did not re-offend	n	34	45
	%	40.5	68.2
Re-offended	n	50	21
	%	59.5	31.8
Total	N	84	66
	%	100.0	100.0

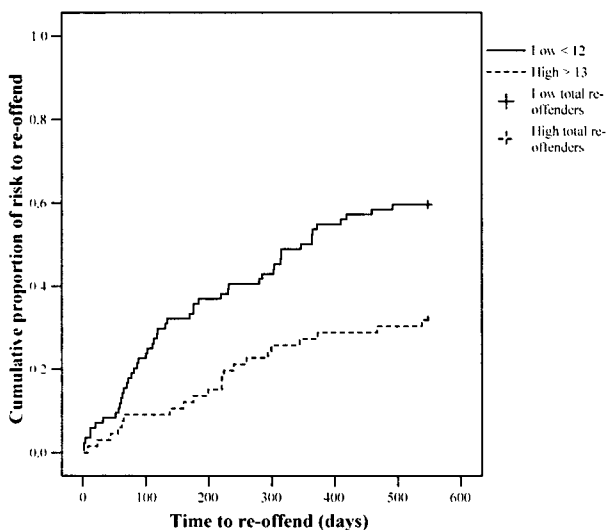
The results of chi square statistical analysis (χ^2 (1, N=150) = 11.38, $p = 0.001$) showed that Social Capital was significantly associated with outcome. These results were further analysed using survival analysis. See Figure 4 for the results of this analysis.

In Table 24, the mean time to re-offending for each of the categories of Social Capital and the cumulative number of offences in 90 day intervals are outlined. The median point for days to re-offend was 346 days. As can be seen from examination of Table 24, persons with high levels of Social Capital took on average 112 days longer to re-offend than persons with low levels of Social Capital.

Table 24

Social Capital scores with 18 month outcome

Social capital	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Low	328.2	38.0	60.0	68.0	90.0	92.0	100.0
High	440.48	28.6	42.9	71.4	85.7	90.5	100.0

Figure 4**Time to re-offend survival curves for high vs low social capital**

As may be seen from examination of these survival outcome data Social Capital was predictive of outcome. Figure 4 indicates that at all time points during the 18 month follow-up, subjects/participants with low Social Capital were at higher risk of reoffending compared to subjects with high Social Capital (Log Rank = 11.61, df 1, $p = .001$).

Cultural Capital

In Table 25, the number of individuals in each of the categories of Cultural Capital who re-offended / did not re-offend is shown. As can be seen from examination of Table 25, more individuals with low levels of Cultural Capital re-offended than did persons with high levels of Cultural Capital.

Table 25

Cultural Capital and outcome (re-offend did not re-offend)

Outcome		Cultural Capital	
		13 or less	14 or over
Did not re-offend	<i>n</i>	28	51
	%	37.3	68.0
Re-offended	<i>n</i>	47	24
	%	62.7	32.0
Total	N	75	75
	%	100.0	100.0

The results of statistical analysis (χ^2 (1, N=150) = 14.14, $p = 0.001$) showed that Cultural Capital was significantly associated with outcome. These results were further analysed using survival analysis. See Figure 5 for the results of this analysis.

The mean times to re-offending for each of the categories of Cultural Capital and the cumulative number of offences in 90 day intervals are outlined in Table 26. The median point was 344 days. As can be seen the mean time to re-offending for low Cultural Capital (322.1 days) was 111 days fewer than the mean for high levels of Cultural Capital (433.1 days). Of interest is that approximately half of the people who re-offended in each group had done so by 180 days.

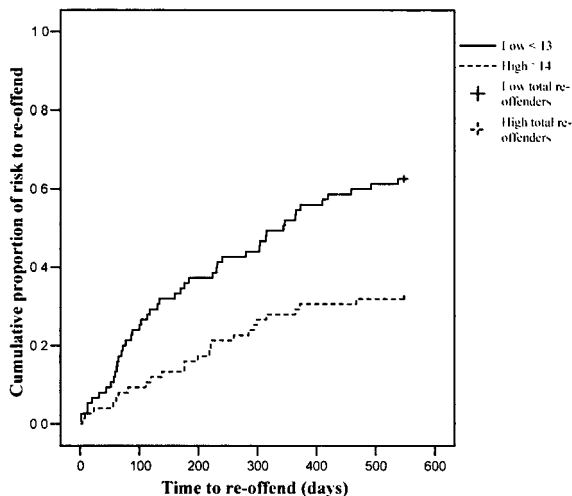
Table 26

Cultural Capital scores with 18 month outcome

Cultural Capital	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Low \leq 13	322.1	38.3	57.5	68.1	82.9	93.6	100
High \geq 14	433.1	29.2	50.0	70.1	87.5	95.8	100

Figure 5

Time to re-offend survival curves for high vs low cultural capital



As may be seen from examination of these survival outcome data Cultural Capital was predictive of outcome. Figure 5 indicates that at all time points during the 18 month follow-up, participants with low Cultural Capital were at higher risk of reoffending compared to participants with high Cultural Capital (Log rank = 13.96, df = 1, $p = 0.000$).

Physical Capital

In Table 27, the number of persons with high and low levels of Physical Capital who re-offended are shown. As can be seen from Table 27, more individuals with low levels of Physical Capital (62%) re-offended than individuals with high levels of Physical Capital (30.9%).

Table 27

Physical Capital and outcome (re-offend did not re-offend)

Outcome		recoded Physical Capital	
		≤ 2	≥ 3
Did not re-offend	<i>n</i>	30	49
	%	38.0	69.0
Re-offended	<i>n</i>	49	22
	%	62.0	31.0
Total	<i>N</i>	79	71
	%	100.0	100.0

The results of statistical analysis ($\chi^2 (1, N=150) = 14.45, p = 0.001$) showed that Physical Capital was significantly associated with outcome, with high levels of Physical Capital being associated with reduced offending. These results were further analysed using survival analysis. See Figure 6 for the results of this analysis.

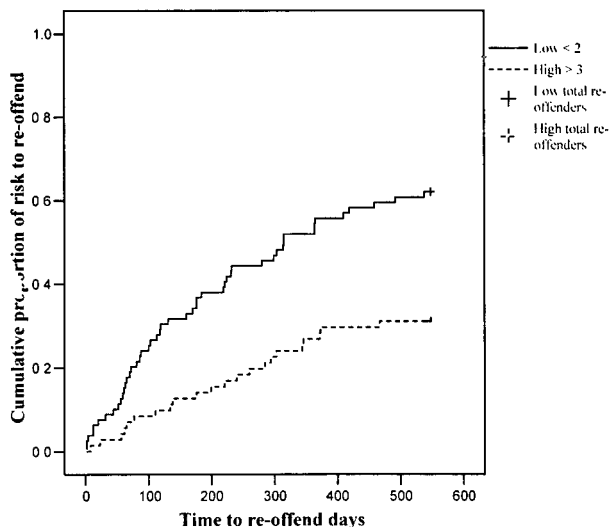
Figure 6**Time to re-offend survival curves for high vs low physical capital**

Figure 6 indicates that at all time points during the 18 month follow-up, subjects/participants with low Physical Capital were at higher risk of reoffending compared to subjects with high Social Capital. As may be seen from examination of this survival outcome data, Physical Capital was influential in determining outcome (Log Rank = 15.15, df 1, $p = .0001$).

The mean times to re-offending for each of the categories of Physical Capital and the cumulative number of offences in 90 day intervals are outlined in Table 28.

Table 28

Physical Capital with 18 month outcome

Physical Capital	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Low ≤ 2	319.4	38.8	55.1	71.4	83.9	93.9	100
High ≥ 3	442.4	27.3	45.5	63.6	86.4	95.5	100

As can be seen from Table 28, persons with high levels of Physical Capital took, on average, longer to re-offend compared to persons with low levels of Physical Capital. The median was 315 days. As can be seen from examination of Table 28, 50% of the re-offenders in both groups had re-offended by 180 days (6 months) after their presenting offence.

In light of the above results hypothesis two was rejected. All the sub-components of Recovery Capital were positively associated with outcome. Their impact is more fully examined under hypothesis four.

Hypothesis 3

The third hypothesis was that court disposition would not influence outcome. In order to address this hypothesis, the court dispositions were collapsed into five categories, namely (i) 'custodial', (ii) 'probation', (iii) 'treatment', (iv) 'community service or fine', and (v) 'binding over order' (a court sanction to be of good behaviour for a specified period and failure to do so would result in the original offence being reconsidered).

For the purposes of these analyses, the 'probation' group included any probation order that involved one-to-one supervision, but did not have a condition of treatment. Although community service orders are a type of probation order, they do not involve any one-to-one supervision of a counselling type format.

The 'treatment' category included binding over orders and probation orders that had a condition of mandated treatment. The 'community service or fine' group consisted of those individuals who received either a fine or community service order for their presenting offence. The 'binding over' group consisted of those individuals who received a binding over order without any condition of treatment.

As can be seen from Table 29, a marginally higher percentage of those individuals who received a binding over order re-offended than did individuals who received any of the other court dispositions. The 'treatment' and 'probation' dispositions showed comparable results. Of interest is the lower percentage (30%) of individuals who received either a 'fine or a community service' order who re-offended. An examination of the mean time to re-offend shows that individuals who received a community service order or a fine took, on average, the longest time to re-offend (429 days). However, persons who received a treatment order had the shortest mean time to re-offend (347 days).

Table 29

18-month outcome by court disposition

Court disposition	No. re-offending	% re-offending	Mean time to re-offending (max days = 548)
Custodial	10/21	47.6	387.9
Probation order	20/38	52.6	363.9
Treatment order	24/46	52.2	347.0
C.S. or fine	9/30	30.0	429.8
Binding over order	8/15	53.3	387.3

As can be seen from examination of Table 30, over 50% of persons who received a custodial sentence, a treatment order, a probation order or a fine / community service order had re-offended within six months of their presenting offence. However, at six months outcome the largest percentage of individuals who had re-offended were those who received a treatment order. A chi square analysis was undertaken on these data.

Table 30

Offending at 90 day intervals by court disposition

Court disposition	Cumulative % of offenders by 90 day intervals					
	90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Custodial	40.0	50.0	60.0	80.0	100.0	100.0
Treatment order	41.6	66.6	75.0	87.5	91.7	100.0
Probation order	30.0	50.0	75.0	85.0	95.0	100.0
C.S. or fine	44.4	55.5	77.7	88.9	100.0	100.0
Binding over order	12.5	37.5	62.5	62.5	87.5	100.0

The results of chi square statistical analyses in Table 31 show that only the community service + fine court disposition was found to be significantly associated with outcome, with fewer individuals who received a community service order or a fine re-offending.

Table 31

Court disposition and outcome (chi square analyses)

Court disposition	χ^2	df	p value	Significance
Custodial disposition	0.001	1	0.977	NS
Treatment order	0.624	1	0.430	NS
Probation order	0.573	1	0.449	NS
C.S. or Fine	4.520	1	0.034	S
Binding over order	0.241	1	0.624	NS

An exploratory survival analysis was conducted to employ the log rank statistic. The result of this analysis was (Log rank = 3.58, df 1, $p = 0.0587$). This non-significant result indicated that the C.S. + fine disposition was not consistently associated with a reduced rate of re-offending throughout the 18 month follow up. Exploratory survival analyses were undertaken on the remaining court dispositions. As can be seen from Table 32, none of these analyses reached significance.

Table 32

Court disposition and 18 month outcome (survival analyses)

Court disposition	Log Rank	df	p value	Significance
Custodial disposition	0.01	1	0.919	NS
Treatment order	1.06	1	0.303	NS
Probation order	0.44	1	0.506	NS
C.S. or Fine	3.58	1	0.059	NS
Binding over order	0.05	1	0.829	NS

The impact of one-to-one supervision within court dispositions was also examined. One-to-one supervision included any individual who had individual, regular contact appointments with a probation officer and/or a treatment worker from the alcohol and drug service. The result of this chi square analysis was (χ^2 (1, N=150) = 2.40, $p = 0.121$). A survival analysis was also carried out on these results (log rank 2.74, df 1, $p = 0.098$) and demonstrated that one-to-one contact was not associated with outcome. Although, as outlined in Table 33 persons not receiving one-to-one supervision generally took longer to re-offend this was not significant.

Table 33

One-to-one supervision as a component of court dispositions with 18 month outcome

One-to-one supervision	Number re-offending	% re-offending	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
				90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Yes	44/83	53.0	352.3	36.4	59.1	72.7	86.4	93.2	100.0
No	27/67	40.3	408.9	33.3	48.2	62.9	81.5	96.3	100.0

In order to establish whether LSI-R scores and Recovery Capital scores amongst the court dispositions were significantly different, a series of independent t-tests were undertaken. Mean Recovery Capital scores for individuals who received a fine/community service order were significantly higher (i.e., individuals had higher levels of Recovery Capital) compared to individuals who did not receive this type of disposition ($M = 68.80$, $SD = 12.45$ and $M = 58.83$, $SD = 12.85$, respectively), $t(148) = 3.83$, $p = 0.001$ (two-tailed). In keeping with this result the mean LSI-R scores for individuals who received a fine/community service order were significantly lower (i.e., individuals were lower risk and had a lesser need for service provision) compared to persons who did not receive a community service order or a fine ($M = 16.40$, $SD = 7.05$ and $M = 21.83$, $SD = 8.39$, respectively), $t(148) = 16.40$, $p = 0.001$ (two-tailed). The mean Recovery Capital scores for individuals who received a custodial sentence were significantly lower (i.e., individuals had lower levels of Recovery Capital) compared to individuals who did not receive a custodial sentence ($M = 54.67$, $SD = 13.33$ and $M = 61.82$, $SD = 13.13$ respectively), $t(148) = 2.31$, $p = 0.02$ (two-tailed).

Thus, from the analysis conducted to examine hypothesis three, the hypothesis was supported in that court disposition had no significant impact on outcome.

Hypothesis 4

In hypothesis four, it was stated that although demographic, criminal and drug use factors will influence outcome, it was predicted that Recovery Capital would be the strongest predictor of outcome. In order to address this final hypothesis, demographic, criminal and drug use variables were analysed with regard to outcome (offend or did not re-offend).

The influences of demographic variables on outcome are presented in Table 34. As can be seen from examination of this Table, 61 (50%) of men re-offended compared with 10 or 35.7% of the women. Age also appeared to influence the rate of re-offending with 17 (32.1%) of older individuals re-offending compared to 32 (68.1%) of younger ones. Employed individuals also had a lower rate of re-offending with 23 (31.9%) re-offending as compared to 48 (61.5%) of those who were unemployed. Interestingly, marital status did not influence outcome.

Table 34

Demographic variables and outcome (re-offend did not re-offend)

Demographic variable	No. re-offending	% re-offending
Gender		
Male	61/122	50.0
Female	10/28	35.7
Age		
≤ 25 yrs	32/47	68.1
26-36 yrs	22/50	44.0
≥ 37 yrs	17/53	32.1
Marital status		
Single/divorced	46/94	48.9
Married / relationship	25/56	44.6
Employment		
Employed	23/72	31.9
Unemployed	48/78	61.5

In Table 35, the cumulative numbers of offenders at 90 day intervals are illustrated. Consistent with previous analysis, a considerable amount of re-offending had occurred within 180 days (6 months) of the presenting offence.

Table 35

Demographic variables and 18 month outcome

Demographic variable	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Gender							
Male	369.02	32.7	52.4	68.9	85.2	95.1	100.0
Female	415.04	50.0	70.0	70.0	80.0	90.0	100.0
Age							
≤ 25 yrs	305.94	31.3	53.1	68.8	81.2	96.9	100.0
26-36 yrs	370.51	36.3	68.2	81.8	95.4	100.0	100.0
≥ 37 yrs	447.8	2	41.2	52.3	76.5	82.4	100.0
Marital status							
Single/divorced	381.29	32.1	52.2	58.7	80.4	93.5	100.0
Married / relationship	371.45	40.0	60.0	88.0	92.0	96.0	100.0
Employment							
Employed	443.81	26.1	47.9	60.9	78.3	86.9	100.0
Unemployed	316.51	39.6	58.3	72.9	87.5	97.9	100.0

As can be seen from Table 36, using chi square analysis, age and employment were significantly associated with outcome. The older an individual was at the time of the presenting offence, the less likely he or she was to re-offend. Being employed was also associated with outcome, with more of those who were unemployed re-offending. Marital status and gender were not significantly associated with outcome.

Table 36

Demographic variables and outcome (chi square analyses)

Demographic variable	χ^2	Df	p value	significance
Gender	0.186	1	0.172	NS
Age	13.291	2	0.001	S
Marital status	0.259	1	0.610	NS
Employed	13.153	1	0.000	S

Further analysis of these demographic variables was undertaken using survival analysis. The results of analyses that reached significance are presented below.

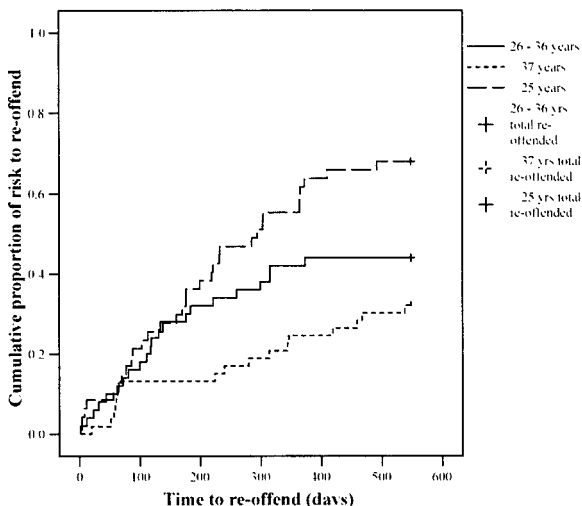
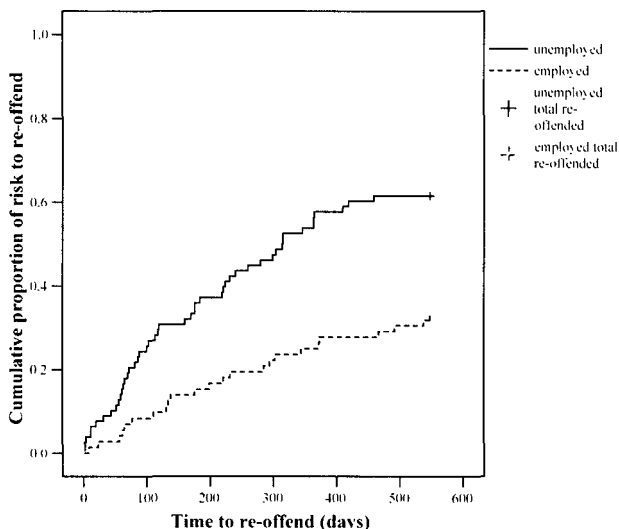
Figure 7**Time to re-offend survival curves for age**

Figure 7 indicates that older participants (≥ 37 yrs) were less likely to re-offend than younger participants. Participants under the age of 25 years had the highest risk of reoffending during the 18 month follow-up (Log rank 13.58, df 2, $p = 0.001$).

As can be seen from examination of Figure 7, within the first 90 days of the follow up period there was a sharp rise in risk of re-offending for all ages. This levelled off at around the 100 day mark for the older individuals (≥ 37 years). The risk of re-offending between the remaining two younger age groups does not appear to differ until around 170 days. At this point the persons aged 26-36 years appear to have a lower risk of re-offending than the younger group (< 25 yrs). This reduced risk is maintained for the remainder of the follow up.

Figure 8**Time to re-offend survival curves for employed vs unemployed**

As can be seen from examination of the survival outcome data in Figure 8, employment was significantly associated with outcome (Log rank 14.46, df 1, $p = 0.0001$). Individuals who were employed were less likely to re-offend than persons who were unemployed. At all time points during the 18 month follow-up, unemployed participants were at a higher risk of reoffending compared to employed participants.

The influence of drug use variables on outcome are examined in the following tables. As can be seen from examination of Table 37, a slightly larger, but non-significant, percentage of illegal drug users (55.7%) re-offended than did alcohol users (41.6%).

Table 37

Drug of choice with outcome (offend did not re-offend)

Drug of choice	No. re-offending	% re-offending
Alcohol	31/89	41.6
Illegal drugs	34/61	55.7

As can be seen from Table 38, individuals with a preference for alcohol as opposed illegal drugs had a mean time to re-offending that was approximately one month longer. A chi square analysis of these results was undertaken ($\chi^2(1, N=150) = 2.913, p = 0.088$). These results were further analysed using survival analysis (Log rank 3.10, df 1, $p = 0.079$). The results of this further analysis showed that drug of preference did not significantly influence outcome.

Table 38

Drug of choice with 18 month outcome

Drug of choice	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Alcohol	402.9	40.5	54.1	64.9	81.1	89.2	100.0
Illegal drugs	369.02	55.9	73.5	91.2	100.0	100.0	100.0

The influence of drug dependence on outcome is illustrated in Table 39. As can be seen from a review of this table, 54 (52.9%) of drug dependent individuals re-offended as compared to 17 (35.4%) of individuals who were not drug dependent at the time of their presenting offence.

Table 39

Drug dependence with outcome (offend did not re-offend)

Dependent drug use	No. re-offending	% re-offending
Yes	54/102	52.9
No	17/48	35.4

A chi square analysis of these results was undertaken ($\chi^2(1, N=150) = 4.021, p =$

0.045). The results of this analysis showed that drug dependence was significant at $p = 0.05$. This result was further analysed using survival analysis (Log rank = 3.60, df 1, $p = 0.058$) thus just failing to reach significance.

As can be seen from a review of Table 40 individuals who were drug dependent at the time of their presenting offence had a mean time to re-offending of 357.9 days. This was 61.5 days less than the mean number of days for individuals who were not drug dependent at the time of their presenting offence.

Table 40

Drug dependence with 18 month outcome

Dependent drug use	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Yes	357.9	37.0	55.6	66.7	81.5	94.4	100.0
No	419.4	29.4	52.9	76.4	94.1	94.1	100.0

The association of treatment with outcome is illustrated in Table 41. In this instance treatment refers to anyone who was receiving either voluntary or court mandated treatment. As can be seen from examination of this table, a higher, though non-significant, percentage of individuals in treatment had re-offended (51.8%) than those who were not receiving treatment (41.5%).

Table 41

Drug treatment with outcome (offend did not re-offend)

Receiving treatment	No. re-offending	% re-offending
Yes	44/85	51.8
No	27/65	41.5

As can be seen from Table 42, individuals receiving treatment re-offended, on average, 33 days quicker than individuals not receiving treatment. A chi square analysis of these results was undertaken (χ^2 (1, $N=150$) = 1.545, $p = 0.2249$). These results were further analysed using survival analysis (Log rank 1.47, df 1, $p = 0.2249$). Thus engagement in drug treatment failed to reach significance.

Table 42

Drug treatment with 18 month outcome

Receiving treatment	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Yes	363.5	38.6	54.6	65.9	81.8	90.1	100.0
No	396.1	29.6	55.5	74.1	88.9	100.0	100.0

As can be seen from examination of Table 43, of the criminogenic characteristics examined, only the number of prior convictions appeared to influence outcome. Forty two (55.3%) of the participants with six or more prior convictions re-offended whereas seven (25%) of the participants with no prior convictions re-offended.

Table 43

Criminological characteristics with outcome (offend did not re-offend)

Criminological characteristic	No. re-offending	% re-offending
Age first conviction		
≤ 18 years	36/68	52.9
≥ 19 years	35/82	42.7
No. of prior convictions		
0	7/28	25.0
1-5	22/46	47.8
≥ 6	42/76	55.3
Type of prior conviction		
Drug related	37/69	53.6
Alcohol related	53/112	47.3
Violent	34/64	53.1
Time spent in prison		
0 weeks	36/89	40.4
1-12 weeks	12/24	50.0
≥ 13 weeks	23/37	62.2

Time spent in prison may also be an influencing factor with 36 (40.4%) of participants who had not spent any time in prison re-offending as compared to 23 (62.2%) of the participants who had spent 13 or more weeks in prison.

As can be seen from Table 44, a conviction under the age of 18, more than six prior convictions and increasing amounts of time spent in prison were the criminological characteristics that shortened the mean time to re-offend.

Table 44

Criminological characteristics by 18 month outcome

Criminological characteristic	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
Age first conviction							
≤ 18 years	340.65	47.2	61.1	77.8	86.1	94.4	100.0
≥ 19 years	408.27	22.9	48.6	60.0	82.9	94.3	100.0
No. prior convictions							
0	25.0	28.6	42.9	57.2	100.0	100.0	100.0
1-5	47.8	27.3	45.5	54.6	81.8	90.9	100.0
≥ 6	55.3	40.5	61.9	78.6	85.7	95.2	100.0
Type of prior conviction							
Drug related	356.9	29.7	54.1	70.3	83.8	100.0	100.0
Alcohol related	375.4	37.8	58.5	69.8	83.1	92.5	100.0
Violent	350.17	55.9	70.6	79.4	88.2	94.1	100.0
Time spent in prison							
0 weeks	409.45	30.6	50.0	66.7	86.1	91.7	100.0
1-12 weeks	345.71	50.0	75.0	75.0	91.7	100.0	100.0
≥ 13 weeks	321.73	34.8	52.2	69.6	82.7	95.7	100.0

In the first instance, chi square analyses of these results were undertaken. See Table 45 for the results of these analyses.

Table 45

Criminological variables with outcome (chi square)

Criminological characteristic	χ^2	df	p value	Significance
Age first conviction	1.569	1	0.210	NS
No. prior convictions	7.524	2	0.023	S
Alcohol prior	0.000	1	0.996	NS
Violent prior	1.502	1	0.220	NS
Drug prior	1.86	1	0.172	NS
Total time in prison	5.024	2	0.081	NS

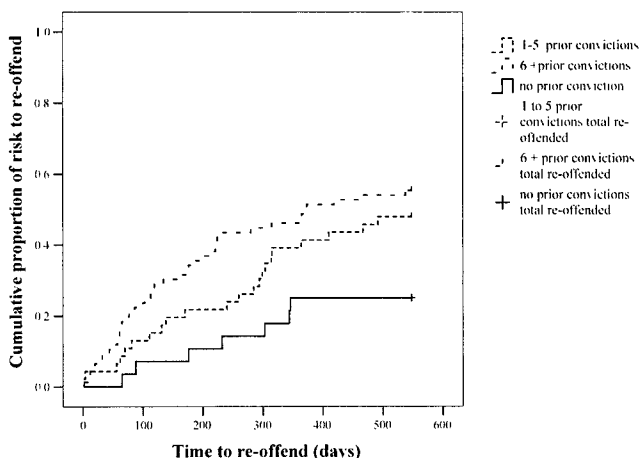
Only the number of prior convictions reached significance; the remaining criminogenic variables failed to reach significance. These variables were further analysed using survival analysis, and the results of these analyses are presented in Table 46.

Table 46

Criminological variables with outcome (survival analysis)

Criminological characteristic	Log Rank	df	p value	Significance
Age first conviction	2.71	1	0.0998	NS
No. prior convictions	7.71	2	0.0211	S
Alcohol prior	0.03	1	0.8992	NS
Violent prior	0.46	1	0.4963	NS
Drug prior	1.86	1	0.1724	NS
Total time in prison	5.68	2	0.0583	NS

As can be seen from a review of Table 46, only the number of prior convictions reached significance ($p = 0.02$). This significant result is illustrated in Figure 9.

Figure 9**Time to re-offend survival curves for number of prior convictions**

As can be seen from examination of the survival outcome data in Figure 9, number of prior convictions was significantly associated with outcome (Log rank 7.71, df 2, $p = 0.021$). Persons with no prior convictions were less likely to re-offend than persons who were unemployed. At all time points during the 18 month follow-up, persons with no prior convictions were at a lower risk of reoffending compared to

participants with one or more prior convictions. Participants with six or more prior convictions were the most at risk of re-offending throughout the follow up.

An examination of current criminological characteristics compared to outcome was undertaken. The results are presented in Table 47. As can be seen from examination of this Table, the number of presenting offences were associated with outcome. Of the individuals with one presenting offence, 25 (32.4%), re-offended whereas 48 (67.6%) of participants with two or more presenting offences re-offended.

Table 47

Current criminological profile with outcome (offend did not re-offend)

Current criminological characteristic	Number re-offending	% re-offending
No. of presenting offences		
1	23/59	32.4
≥2	48/91	67.6
Presenting offence		
Alcohol related	40/93	43.0
Drug related	31/57	54.4
LSI-R Scores		
Low 0 – 13	9/32	28.1
Low / Moderate (14 -23)	30/73	41.1
Moderate (24-33)	19/28	67.9
Moderate / High	13/17	76.4

LSI-R scores were also associated with outcome with individuals with higher scores re-offending at a higher rate than participants with lower scores. In terms of the type of presenting offence, drug related offenders (n=31, 54.4%) re-offended at a slightly non significantly higher rate than participants with an alcohol related offences (n=40, 43%).

As can be seen from an examination of Table 48, individuals with one presenting offence took on average longer (395.5 days) to re-offend than individuals who had two or more presenting offences (366.31 days). Participants whose presenting offence was alcohol related took on average 65 days longer to re-offend than participants whose presenting offence was drug related. Of most interest is the difference in time to re-offend amongst the different categories of the LSI-R. Individuals with a low LSI-R score took on average 179 days longer than individuals with a moderate high LSI-R score.

Table 48

Current criminological profile with 18 month outcome

Current criminological characteristic	Mean time to re-offending (max days = 548)	Cumulative % of offenders by 90 day intervals					
		90 %n	180 %n	270 %n	360 %n	450 %n	540 %n
No. of presenting offences							
1	395.1	43.5	65.2	73.9	91.3	100.0	100.0
≥ 2	366.3	31.3	50.0	66.7	81.3	91.7	100.0
Presenting offence							
Alcohol related	402.0	37.5	50.0	62.5	77.5	90.0	100.0
Drug related	337.7	32.3	61.3	77.4	96.8	100.0	100.0
LSI-R Scores							
Low 0 – 13	455.8	22.2	33.3	67.7	88.9	100.0	100.0
Low / Moderate (14 -23)	406.0	33.3	56.7	60.0	83.3	93.3	100.0
Moderate (24-33)	275.6	47.4	68.4	84.2	89.5	100.0	100.0
Moderate / High	276.4	30.8	46.2	69.2	84.6	92.3	100.0

In the first instance, chi square analyses of these results were undertaken. The results are presented in Table 49. As can be seen from a review of this Table, LSI scores were the only criminological variable that was significantly associated with outcome with lower scores (lower risk) being associated with not re-offending.

Table 49

Current criminological variables with outcome (chi square)

Current criminological variable	χ^2	df	p value	Significance
No. presenting offences	2.720	1	0.099	NS
Alcohol/ drug presenting	0.590	1	0.442	NS
LSI	13.483	2	0.001	S

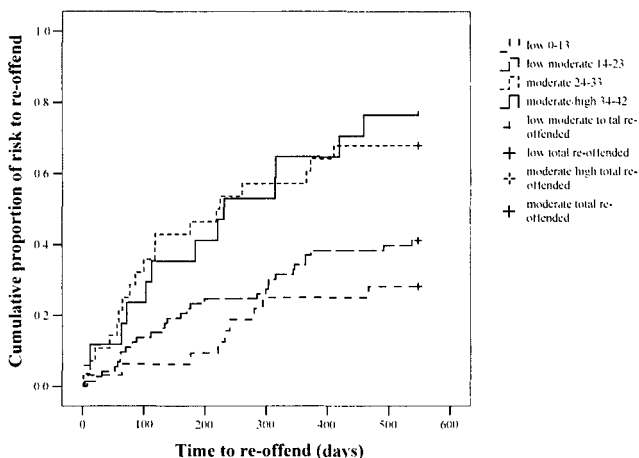
These criminological variables and generic presenting offence type were analysed using survival analysis, and the results of these analyses are presented in Table 50. As can be seen from Table 50, LSI-R scores and generic presenting offence were significantly associated. Persons with a presenting offence for drink driving had a lower risk of re-offending throughout the 18 month follow as compared to the other generic presenting offences (drugs, general theft, general violence, motoring and public order).

Table 50

Current criminological variables with outcome (survival analyses)

Current criminological variable	Log Rank	df	p value	Significance
No. presenting offences	1.91	1	0.167	NS
Alcohol/ Drug presenting	2.47	1	0.116	NS
LSI	19.84	3	0.000	S
Generic presenting offence	15.68	5	0.008	S

The results of the survival analyses for LSI-R scores are presented in Figure 10.

Figure 10**Time to re-offend survival curves for LSI-R scores**

As may be seen from examination of these survival outcome data, LSI-R scores were significantly associated with outcome (Log rank = 19.84, df 3, $p = 0.0002$). Lower scores on the LSI-R were associated with a lower risk of re-offending. At all points during the 18 month follow up period individuals with low LSI-R scores were at a lower risk of re-offending than persons with higher LSI-R scores. Individuals with LSI-R scores in the moderate high range (33-42) had the highest risk of re-offending during outcome.

Cox regression models were used to examine the independent effects of the variables on outcome after adjusting for other covariates. Additionally, the Cox regression analyses were used to identify variables that were most statistically significantly associated with re-offending. Hence a modelling strategy that involved variable reduction was adopted. Due to a small sample size and a large number of variables only variables with a log rank test score of $p < 0.1$, from the survival analyses, were included (see Appendix 3 for a list of these variables). The first analysis involved entering individual variables into their own Cox regression models (i.e., univariate analysis), therefore obtaining hazard ratios for independent variables before adjusting for other covariates. The results of these Cox regression analyses are shown in Tables 51 - 56.

As can be seen from a review of Table 51, age was statistically associated with outcome. Individuals over 37 years of age had a 65% reduced risk of re-offending than did persons aged 25 years or younger. Persons aged 26-36 years had a 43% reduced risk of re-offending as compared to persons aged 25 years or younger. Being employed was also positively associated with outcome with employed individuals having a 61% reduced risk of re-offending as compared to unemployed persons.

Table 51

Univariate analysis of demographic covariates in Cox regression model

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Age				
≤ 25 yrs	1.000			
26-36 yrs	0.565	0.328	0.973	0.040
≥ 37 yrs	0.351	0.194	0.634	0.001
Marital status				
Single / divorced	1.000			
Married / relationship	0.950	0.584	1.546	0.837
Employment				
Unemployed	1.000			
Employed	0.393	0.239	0.648	0.000

As can be seen from examination of Table 52, neither drug of choice nor drug dependency were significantly associated with outcome.

Table 52

Univariate analysis of drug variable in Cox regression

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Drug of choice				
Alcohol	1.000			
Illegal drugs	1.516	0.950	2.417	0.081
Drug dependent				
No	1.000			
Yes	0.594	0.344	1.024	0.061

As can be seen from Table 53, the number of prior convictions was statistically associated with outcome. Persons with six or more prior convictions were 1.3 times more likely to re-offend than individuals with no previous convictions. Total amount of time spent in prison was also negatively and significantly associated with outcome.

Table 53

Univariate analysis of historical criminological covariates in Cox regression model

Covariate	Hazard Ratio	95% CI		P-value
		Lower	Upper	
No. prior convictions				0.028
0	1.000			
1-5	2.203	0.941	5.158	0.069
≥ 6	2.924	1.313	6.512	0.009
Age first offence				
≤ 18 yrs	1.000			
≥ 19 yrs	0.678	0.426	1.081	0.102
Total time in prison				
0 weeks	1.000			
1-12 weeks	1.424	0.741	2.738	0.289
≥ 13 weeks	1.861	1.102	3.142	0.020

As can be seen from Table 54, in the univariate analysis, LSI-R scores were statistically associated with outcome with individuals in the moderate and moderate/high ranges being at a greater risk of re-offending compared to individuals in the low range. Persons in the moderate range and the moderate high range had a 66% and 71%, respectively, increased risk of re-offending compared to those in the low range. Generally there appears to be a positive trend between risk of re-offending and LSI-R scores. Interestingly, a general violence presenting offence was positively

associated with outcome. Individuals with this type of presenting offence were 93% less likely to re-offend compared to individuals who did not have a presenting offence of general violence. Persons with a presenting offence for drink driving had a 42% reduced risk of re-offending. Individuals with a drug related presenting offence were 1.1 more times likely to re-offend than individuals who did not have a drug related presenting offence.

Table 54

Univariate analysis of current criminological covariates in Cox regression model

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
LSI-R scores				
Low (≤13)	1.00			
Low/moderate (14-23)	1.61	0.765	3.393	0.210
Moderate (24-33)	3.68	1.663	8.153	0.001
Moderate / High (34 – 42)	4.02	1.712	9.414	0.001
Generic presenting offence				
Drugs (vs. other pres. offences)	1.13	0.562	2.250	0.739
General theft (vs. other pres. offences)	0.63	0.291	1.350	0.233
General violence (vs. other pres. offences)	0.18	0.064	0.532	0.002
Drink driving (vs. other pres. offences)	0.58	0.137	2.458	0.460
Motoring (vs. other pres. offences)	1.06	0.583	1.911	0.859

As can be seen from Table 55, medium and high levels of Recovery Capital were negatively associated with outcome. Individuals with medium or high levels of Recovery Capital were 55% and 80% respectively, less likely to re-offend compared to participants with low levels of Recovery Capital. Generally there appears to be a negative trend between Recovery Capital and risk of re-offending (i.e., an increase in recovery Capital reduces risk of re-offending).

Table 55

Univariate analysis of Recovery Capital in Cox regression

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Recovery Capital				
Low (≤ 54)	1.00			
Medium (55-67)	0.45	0.268	0.770	0.003
High (< 68)	0.19	0.193	0.099	0.000

Each of the components of Recovery Capital was individually subjected to univariate analysis. As can be seen from Table 56, each of the component parts of Recovery Capital were positively and statistically associated with outcome. Higher levels of Human, Social, Physical and Cultural Capital were associated with a reduced risk of re-offending as compared to individuals with lower levels of these capitals. In this instance, higher levels of each of the component parts of Recovery Capital was associated with a 50% or greater reduction in re-offending. For example, individuals with a high level of Human Capital and Physical Capital demonstrated, respectively, a 65% and 62% reduced risk of re-offending.

Table 56

Univariate analysis of component parts of Recovery Capital in Cox regression

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Human Capital				
Low ≤ 33	1.00			
High ≥ 34	0.35	0.210	0.593	0.000
Social Capital				
Low ≤ 12	1.00			
High ≥ 13	0.42	0.254	0.705	0.001
Cultural Capital				
Low ≤ 13	1.00			
High ≥ 14	0.40	0.246	0.661	0.000
Physical Capital				
Low ≤ 2	1.00			
High ≥ 2	0.38	0.230	0.632	0.000

As can be seen from Table 57, neither one-to-one supervision as part of a court disposition, a community service order nor a fine were statistically associated with outcome.

Table 57

Univariate analysis of court disposition in Cox regression

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Court disposition				
No one-to-one	1.00			
One-to-one	1.50	0.926	2.415	0.100
No CS/Fine	1.00			
CS/Fine	0.52	0.256	1.030	0.643

Multivariate Cox regression models were then analysed. These models included all variables analysed in the univariate models. After forced-entry of variables into the multivariate model a stepwise variable selection, using backward elimination, was undertaken to obtain a final model which included variables that were most significantly associated with outcome.

In the first instance Recovery Capital was included with all the variables except for the component parts of Recovery Capital (Human, Social, Cultural and Physical Capital). These variables were excluded because they were associated with Recovery Capital score and would therefore interfere with the analysis. Eight steps were needed to reach a final model. Results for this final model are shown in Table 58.

Table 58

Multivariate analysis with Recovery Capital

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Age				
< 25 years	1.00			
26 - 36 years	0.50	0.283	0.877	0.016
> 37 years	0.31	0.169	0.566	0.001
No. prior convictions				
0	1.00			
1-5	1.89	0.795	4.491	0.149
≥ 6	2.47	1.081	5.663	0.032
Recovery Capital				
Low (< 54)	1.00			
Medium (55-67)	0.52	0.306	0.865	0.018
High (> 68)	0.20	0.100	0.398	0.001

As can be seen from Table 58, only the variables of age, number of prior convictions and Recovery Capital remained in the final model of this analysis. In the current study, age and Recovery Capital were the most significantly influential variables on outcome. Individuals aged 37 years and above had a 69% reduced risk of re-offending as compared to individuals who were 25 years and under. Persons with high levels of Recovery Capital had an 80% reduced risk of re-offending compared to individuals with low Recovery Capital. In the current study participants with six or more prior convictions were significantly more likely (2.4 times) to re-offend.

In order to establish the linear association of Recovery Capital with outcome, the above multivariate analysis was repeated substituting the categorical version of

Recovery Capital with its uncategorised form (i.e., in its continuous form). Twelve steps were required to reach a final model with only age and Recovery Capital remaining in the model. In this instance individuals aged 26-36 ($p = 0.03$) were found to have a 45% reduced risk of re-offending and persons aged ≥ 37 years ($p = 0.001$) were found to have a 67% reduced risk of re-offending compared to individuals 25 years or under.

Recovery Capital also remained highly significant ($p = 0.001$). The results indicated that a one score increase in Recovery Capital was associated with a 5% reduction in risk of re-offending.

A third multivariate Cox regression analysis was undertaken. In this instance Recovery Capital was omitted and its component parts in their categorical form were included. Thirteen steps were required to reach the final model that is shown in Table 59.

Table 59

Multivariate analysis with individual component parts of Recovery Capital

Covariate	Hazard Ratio	95% CI		p-value
		Lower	Upper	
Age				
≤ 25 years	1.00			
26-36 years	0.48	0.257	0.891	0.020
≥ 37 years	0.29	0.148	0.569	0.001
Human Capital				
Low	1.00			
High	0.39	0.221	0.703	0.002
Cultural Capital				
Low	1.00			
High	0.45	0.262	0.759	0.003
Generic presenting offence				
Drugs (vs. other presenting offences)	0.85	0.414	1.736	0.651
General theft (vs. other presenting offences)	0.50	0.223	1.106	0.087
General violence (vs. other presenting offences)	0.28	0.094	0.857	0.025
Drink driving (vs. other presenting offences)	0.75	0.174	3.190	0.691
Motoring (vs. other presenting offences)	1.15	0.562	2.352	0.701

As can be seen from examination of Table 59, similar to the univariate analysis of these variables, age, high levels of Human and Cultural Capital and a presenting offence of general violence were statistically influential on outcome. In this instance persons aged 37 years and above had a 71% reduced risk of re-offending as compared to persons aged 25 years and below. A high level of Human Capital as compared to a low level provided

a 61% reduced risk of re-offending. High levels of Cultural Capital provided a 55% reduced risk of re-offending. Individuals with a presenting offence for general violence had a 72% reduced risk of re-offending.

In order to establish the linear relationship of the component parts of Recovery Capital with outcome this multivariate analysis was repeated substituting the categorical versions Human, Social, Cultural and Physical Capitals with their uncategorised forms. Twelve steps were required to reach a final set of variables. Age (≥ 37 years) remained significantly associated with outcome ($p = 0.001$). In this instance, persons aged 37 years or over had a 72% reduced risk of re-offending as compared to individuals aged 25 years or younger. Human and Cultural Capital also remained significantly associated with outcome ($p = 0.004$ and $p = 0.002$, respectively). In this model a one score increase in Human Capital was associated with a 5.4% reduction of risk of re-offending and a one point increase in Cultural Capital was associated with a 9.2% reduction of risk of re-offending.

The non-significance of the LSI-R scores in all multivariate Cox regression models was surprising. LSI-R scores share common aspects with Recovery Capital and are somewhat moderately correlated when continuous forms of the two scales are compared ($r = 0.68$). The inclusion of both variables in the same model may have resulted in LSI-R scores not reaching significance. In order to test this, a multivariate analysis equivalent to those undertaken previously that included LSI-R scores and the other selected variables, but excluded all Recovery Capital variables was undertaken. The final Cox regression model, reached within six steps, confirmed that LSI-R was not associated with outcome in the presence of other covariates.

In light of the above results the hypothesis was upheld. Recovery Capital along with age was found to be more significantly associated with outcome than demographic, criminological and drug use variables.

Chapter Four Discussion

It is considered that the key innovation of this work was the application of a sociological concept, Recovery Capital, to the management of alcohol and other drug related offending. The concept of Recovery Capital has robust sociological credentials and had been utilised by Cloud and Granfield (2001) to explain the phenomenon of natural recovery from drug dependence. It is believed, however, that this research was one of the first attempts to apply the concept of Recovery Capital in an operational setting to a cohort of persons with alcohol and drug problems. Furthermore, because the author's area of interest was alcohol and drug related offending, it is believed that this was the first attempt to apply the notions of Recovery Capital, as espoused by Cloud and Granfield, to the area of criminal behaviour. The results of the study have therefore been of considerable interest and invite the further application of the concept of Recovery Capital to both the addictions and criminal behaviour fields.

The research also speaks to the complexity of therapeutic jurisprudence. What was clear from the results was that outcome was significantly influenced by the levels of presenting 'Recovery Capital'. It could be, given the innovative and thereby exploratory nature of this research (however well theoretically justified), that the central role of Recovery Capital in determining outcome was surprising and is therefore questionable. Thus, the nature of the study, especially its design and implementation, merits close scrutiny.

This study was a naturalistic, 'real world', endeavor. All the intake data were derived from clinical reports undertaken by probation officers, and alcohol and drug counsellors, going about their everyday business. Despite the obvious inherent research weakness of such a process (particularly in terms of reliability), it is noted that all the probation reports were composed using a standardised procedure and the alcohol and drug reports were undertaken by two experienced clinicians working to an agreed format. It is considered that these reports offered a rich source of data from which the overall Recovery Capital scores were able to be derived. It could therefore be argued that the strength of this study is that it relied on everyday practice and that as such the findings are highly replicable in the real world of therapeutic jurisprudence.

However, it is noted that, traditionally, the gold standard for assessing the impact of therapeutic intervention is the randomised control trial. As noted by Chambless and Hollon (1998), "in our view efficacy is best demonstrated in randomised clinical trial (RCTs) – group designs in which patients are randomly assigned to the

treatment of interest or one or more comparisons conditions- or carefully controlled single case experiments and their group analogues" (P. 8). Interestingly, Chambless and Hollon noted as an aside that "this approach has not gone without challenge" (p 9)

The challenges to RCTs in the evaluation of the impact of psychotherapy, and more specially in this case of therapeutic jurisprudence, are basically three fold. The first is that the imposition of a randomised controlled procedure immediately distorts what happens in real life. This is so because the requirements of equality or equivalence between any two or more comparison groups can only be achieved by the use of stringent inclusion/exclusion criteria. As adroitly and humorously noted by Briere (2004), the difficulty in relying on research to guide clinical practice is that in research trials, patients with "ooger boogers or whatisnames", in addition to the presenting condition of interest, are immediately excluded from any research trial. However, clinicians, on a daily basis, see clients with the presenting conditions accompanied with "ooger boogers" and "wotsisnames". In more professional language clients with a 'clean' single diagnosis are rare; what is more common in everyday clinical life is that patients present with dual or multiple diagnoses. This contention has been more formally articulated by Goldfried and Wolfe (1998). They argued that although RCTs have impeccable internal validity this is always, and only, achieved at the cost of ecological validity. Hence, RCTs while achieving research certainty do so at the expense of 'real life' clinical complexity.

The second challenge to RCTs is that in order to achieve a RCT some patients need to be allocated away from the active intervention into a comparison group. The difficulty with this is that most comparison groups are either untreated controls or receive a placebo (empty) intervention. In the case of therapeutic jurisprudence the extant evidence that drug problems are amenable to intervention ensures that the requirement of an RCT design to exclude half of any investigative population from a known-to-be-effective intervention poses serious ethical questions.

There is a further difficulty in that even if some patients are excluded from the active clinical interventions of interest, if an alternative intervention is offered that is neither placebo nor a waiting list control, then how the comparison intervention is delivered is of utmost importance. Unfortunately, as noted by Westen and Morrison (2001), many reportedly 'active' comparison interventions are not delivered by persons who have expertise and conviction about that comparison intervention. In effect, many supposed active comparisons are nothing more than time spent in clinical contact with

individuals who do not really ascribe to the alternative intervention they are delivering. The very real difficulty here is that when active comparative interventions are delivered by skilled therapists who are persuaded by the alternative modality then the superiority of the intervention of interest is seldom (if ever) found to be superior. Indeed, a pertinent example of this is the NIMH depression study (Elkin, 1994) that demonstrated an equivalence of outcome across four very different types of therapeutic interventions for the management of depression. This whole issue of equivalence of therapeutic interventions has also been demonstrated in Project MATCH in which three contrasting and distinct therapeutic modalities were all found to be equally effective. Gossop (2005) in a recent review of what works in the treatment of alcohol and drug dependence noted that "changes in behaviour after treatment have often been attributed in a non-specific manner to therapeutic and cognitive processes which may have occurred during and after treatment" (p. 8) In his paper he acknowledged that factors such as 'therapeutic relationship' and 'treatment engagement' are considered to be important variables in successful treatment interventions. These findings raise a key question as to what works in therapy.

Evidently, it may not be the type of treatment that matters, but the 'non specific factors' such as the quality of the therapeutic alliance. Thus, any controlled trial of a therapeutic jurisprudence intervention would need, in order to demonstrate the superiority of any intervention, a random allocation of patients into an alternative intervention that was run by skilled and committed proponents of that intervention. Based on the evidence to date one would anticipate equal impact. Hence, given the above discussion, a strong case can be made for the usefulness of naturalistic designs such as that employed in this study. What has to be stressed is that naturalistic designs are not directed at demonstrating the effectiveness or efficacy of interventions. Their strength lies in determining those variables that are associated with outcome in the real, day-to-day, clinical world. Thus, it is considered that this study has strong ecological validity, but this was inevitably achieved at the expense of internal consistency.

There are a number of other possible methodological concerns inherent in the study. The first is that the exploratory nature of the study necessitated the operationalization of the concept of recovery capital. As outlined in the methodology this measure was derived from careful examination of the literature as to the conceptual underpinnings of the recovery capital. Then the four component parts of Recovery Capital were operationalized via detailed scrutiny of case record material. Thus, from a

qualitative investigation a scale was then established that was used as a quantitative measure. Such scale development could be subject to criticism in that the psychometric properties of the measure were not investigated. However, this aspect of the research was essentially exploratory in nature and was, as far as is known, the first attempt to apply the concept of recovery capital to offending behaviour. Furthermore, the study had an overall agenda of being an investigation of an innovative therapeutic jurisprudence intervention of which Recovery Capital was one part. The study was thus not research into scale development, but rather the naturalistic application of a promising idea to an area of considerable social concern.

Given the exploratory nature of the research and the innovative operational nature of the derived recovery scale every effort was made to ensure that the scale as it stood was unambiguous and required no interpretation. Indeed, the scale was deliberately designed as being a check list in which the presence or absence of specified aspects of recovery capital were marked. As was demonstrated in the inter-rater reliability study undertaken as part of the scale development the inherent simplicity of the items ensured high inter rater reliability. It is contended that what was derived is essentially an operational check list of recovery capital.

In the event, the results indicated that the idea of recovery capital, as operationalized, was significantly associated with outcome. It is acknowledged that the recovery capital measure as it stands requires further refinement. For example, the four components of recovery capital were clearly inter-correlated and there may well be considerable redundancy in the scale as it stands. Indeed, the four components may not be independent, nonetheless the instrument as a whole was more powerful a predictor of outcome than were any of its four individual components. Unfortunately, because of the dichotomous nature of the check list items, it was not possible to undertake factor analysis to tease out the factor structure of the instrument or the contribution of specific items. However, given the apparent relevance of recovery capital as a predictor of outcome, the further refinement of the scale, and its application elsewhere, could now be considered a priority. From the results it could be an interesting enterprise to undertake a prospective study in which the social capital scale (the one that correlated most highly with the other three) was used as an independent predictive measure and run against the other three capital measures. From such a study it would be possible to determine whether social capital, or any one of the other capitals, could be removed from the scale without causing it any predictive harm.

Having articulated a defence of the design of the study, and thereby its limitations, it is relevant to consider the implications of the overall results. The research was driven by four hypotheses and in the discussion that follows these are addressed sequentially.

Hypothesis one

Hypothesis one was that there would be a positive association between level of 'Recovery Capital' and outcome. Thus, individuals with higher levels of Recovery Capital were predicted to take longer to re-offend. This hypothesis was supported. Recovery Capital was significantly associated with outcome over the follow up period ($p = 0.001$). Twenty two percent of the individuals assessed as having high levels of Recovery Capital re-offended, whereas of the individuals assessed as having low Recovery Capital, 73% re-offended. Individuals with high levels of Recovery Capital were found to have an 80% reduced risk of re-offending compared to individuals with low levels of Recovery Capital. An investigation into the linear association of Recovery Capital with outcome revealed that a one point increase in Recovery Capital score was associated with a 5 % reduced risk of re-offending. What this effectively means is that for every 10 point increment in Recovery Capital score the risk of re-offending was reduced by 50%.

The association of Recovery Capital with recidivism is in line with Moos' (2003) perspective. He wrote "People with addictive disorders exist in a complex web of social forces, not on an island unto themselves, free of social context. Formal treatment can be a compelling force for change, but it typically has only ephemeral influence. In contrast, relatively stable factors in people's lives, such as informal help and ongoing social resources, tend to play a more enduring role" (Moos, 2003, p. 3).

The fact that levels of Recovery Capital were associated with outcome gives rise to a number of issues. First, over the past two decades a significant focus has been placed on investigating the association between drug use and offending behaviour. The aim of this endeavour has been to develop a better understanding of the nature of this relationship and ultimately to establish how such problems may best be managed. To date, the evidence has given rise to a variety of therapeutic interventions that directly target drug use or drug use and offending behaviour. Less formal consideration appears to have been given to the wider social context of the individual. As noted by Gossop (2005), "interventions taking place during treatment are just part of a much wider range

of factors that can influence outcome...environmental supports and stresses can influence outcomes...the gains produced by an effective treatment programme can be undermined and neutralised by adverse social and environmental factors" (Gossop, 2005, p. 10).

In light of the results of the current research, it may be that a therapeutic intervention that is predicated on type of offending (e.g., alcohol and drug related offence) may be less relevant than a generic response to offending that encompasses the individual's total social and psychological resources. A direct implication of this study is that there is a need for the development and delivery of programs that address levels of Recovery Capital as opposed to focusing predominantly on drug and alcohol offending behaviour.

A further implication of this finding is that to single out particular types of offences for interventions could be inequitable: Persons who commit crimes while intoxicated (or to fund future drug use) are effectively being offered an intensity of service that a: identical offence undertaken by a non-drug using person would not prompt. It is acknowledged that this is a perspective that has been adopted by some criminal sector agencies, for example some probation services in the United Kingdom (see Attenborough, 2002). The critical issue is that such thinking has, in the case, of alcohol and drug related offending been obfuscated by the often political drive to address the high incidence of this type of crime. A final, critical, implication of the overall Recovery Capital results is that in future evaluations of therapeutic jurisprudence interventions there will appear to be some need to incorporate notions of Recovery Capital into their design.

Hypothesis two

The second hypothesis was that the constituent components of Recovery Capital, namely social, Human, Cultural and Physical Capital, would not be individually influential in determining outcome. This hypothesis was rejected. Each of the component parts of Recovery Capital was found to be significantly associated with outcome. Indeed these associations were strong. The results from the univariate analysis showed that each component of Recovery Capital was significantly associated with re-offending behaviour. High, as opposed to low, levels of these capitals, resulted in the following risk reductions: Human - 64%, Social - 57%, Physical - 59% and Cultural - 61%.

The significant influence of levels of Human and Cultural Capital was unaffected by the other criminological, demographic and drug use variables. Of interest was that the results of the multivariate analyses in which the component parts of Recovery Capital were included with all the criminological, demographic and drug use variables demonstrated that two component parts of Recovery Capital were especially robust predictors of outcome. These were Human and Cultural Capital, with high levels of Human Capital providing a 61% risk reduction of re-offending and a high levels of Cultural Capital being associated with a 55% risk reduction. Physical and Social Capital, though significantly associated with outcome in the univariate analysis, did not reach significance when compared to the other variables: in this instance, age and presenting offence type, along with Human and Cultural Capital, were deemed to be more influential.

The strength of the impact of the component parts of Recovery Capital can be demonstrated by noting that a one point increase in Human Capital scores was statistically associated with a 5.4% reduced risk of re-offending and a one point increase of Cultural Capital was associated with 9.2% reduction in risk of re-offending. As may be appreciated, these are powerful associations and speak clearly to the influence of these two domains.

As previously stated, Human Capital encapsulates a person's knowledge, skills, educational credentials, employment and physical and mental health. In the current study, a participants' drug use and their psychological resources for managing their day to day existence were also assessed under the remit of Human Capital. The current results indicate a significant association between levels of Human Capital and outcome. Drug use can clearly influence a person's lifestyle and access to coping resources. However, this occurs within the much broader framework of a person's total existence. Individuals who engage in drug use and offending behaviour who have higher levels Human Capital are better 'equipped' to avoid re-offending or becoming immersed in an offending lifestyle. This result speaks to the importance of routinely assessing these Human Capital factors before referring individuals to intervention programmes. By doing this, service providers will be able to reserve resource intensive interventions for those most in need.

The results of the current study also indicated that people's connection to their community, and the networks within which they function, are also of considerable importance. Cultural Capital embodies an individual's familiarity with cultural norms

and the ability to act in one's own interest within those norms. In the present study Cultural Capital assessed people's connection to Jersey in terms of their permanency in Jersey. Participants' social networks were also assessed to establish their potential for influencing behaviour and lifestyle choices. A person's accommodation was also considered in terms of its permanency and suitability. The significant influence of Cultural Capital again emphasises the importance of considering aspects of a people's life, other than their drug use and offending behaviour, when developing interventions targeted at reducing recidivism. In particular, a person's overall ability to manage everyday life, their ability to establish appropriate attachments with others and to ultimately feel 'connected' to the community in which they live seem to be critical factors. Although this information is not necessarily new, it does beg the question as to why, in an attempt to reduce recidivism, so much emphasis is placed on curbing individuals' drug use and changing their cognitions. Perhaps a more relevant style of intervention would be one in which an offender's lifestyle is assessed and resources are targeted at the identified areas of need.

It is believed that this research encompassed the first attempt to operationalise the concept of Recovery Capital into its component parts. Given the innovative nature of the questionnaire utilised to assess Recovery Capital, the above findings were surprising and therefore need to be cautiously considered. What is of interest is that the measure correlated with the LSI-R thereby bestowing the derived Recovery Capital measure with some face validity. Importantly, however, the combined Recovery Capital measure, and its component parts, outperformed the LSI-R as a predictor of outcome. Certainly, the measure, as is, may require further refinement, but the replication of the findings of the significance of this measure in the treatment of alcohol and drug related offending certainly appears to be strongly merited. Its use in the broader addictions field also appears warranted.

Hypothesis three

The third hypothesis was that court disposition would not influence outcome. Consideration of the influence of court disposition was deemed a necessary part of the process of examining the potential impact of Recovery Capital on outcome. To exclude the impact of court disposition was considered to be imprudent. This hypothesis was supported. In the current study, none of the court dispositions, when the results were analysed using survival analysis and Cox regression, was significantly associated with

outcome. However, it is relevant to note that when using a chi square analysis the community service / fine disposition was significant. This result indicated that there was a positive association between individuals who received a community service order or a fine and 18 month outcome. However, as indicated by the non-significant result of the survival analysis, this association was not found consistently over the total 18 month follow up period.

The impact of individual (one-to-one) supervision as part of a court disposition was also examined. No significant association was found between clients who were required to attend individual (one-to-one) regular appointments with either a probation officer and/or an alcohol and drug worker and outcome.

A degree of caution needs to be exercised when considering these results as there are a number of factors that may have influenced this outcome. First, it is possible that undergoing a thorough and confronting assessment was enough, in itself, to impact on an individual's drug use and thereby offending behaviour. The assessment process may have been particularly pertinent for first time offenders (n=28) or people who had not previously undergone such an alcohol and drug assessment. It is also possible that repeat offenders had reached a point in their drug use and offending whereby one more assessment was one too many. Of interest is that the referral of offenders to the Alcohol and Drug Service for an assessment of their drug use in relation to their offending behaviour was a new occurrence in Jersey. Hence, for individuals who were not already in contact with the Alcohol and Drug Service, their court referral may have been the first time that they had been required to speak with a relative stranger about their drug use. As Miller (1983) perceptively commented about motivational interviewing, exposure to an interview in which an individual hears him or herself recount the less good things about their alcohol use, can be salutary. This contention has been well supported by an important, early, British treatment study, in which the impact of a single comprehensive assessment session was demonstrated to be of considerable value in prompting behaviour change (Orford & Edwards, 1977).

The non-significance in this study of court mandated treatment is noteworthy. This result is contrary to the majority of evidence that espouses the efficacy of treatment in reducing drug use and offending behaviour. However, because there was no comparative control group the results of the current study should not be interpreted as indicating that the treatment intervention was not effective. It is, for example, not possible to say whether the individuals who received treatment would have offended

more without this intervention. A more accurate reading of the results may be that the treatment intervention was merely a less powerful player in determining outcome than those dimensions tapped by Recovery Capital.

It is also possible that individuals who were not mandated into treatment by the court did in fact engage in treatment. Following their alcohol and drug assessment, they may have decided to engage in voluntary treatment. Although the current study was able to identify those individuals who were in treatment at the time of their court referred assessment, and those who received court mandated intervention, it was not possible to identify those who engaged in voluntary treatment following their assessment. It is possible that some individuals followed up their assessment by seeking out treatment.

A salient issue is that differences in levels of Recovery Capital may have impacted on court disposition. Clearly, court dispositions range in their severity from binding over orders and/or fines to the more severe imposition of incarceration. It is generally assumed that the severity of the disposition speaks to the severity of the presenting offence and the relentlessness of an offender's engagement in criminal activity. Probation orders and treatment orders were considered to be service intensive and were therefore reserved for higher risk offenders with demonstrable areas of need. For offenders whose needs were less marked, and who had lower levels of risk of re-offending, it was assumed that they would receive lesser court dispositions such as fines or community service orders. Very low risk individuals could therefore receive binding over orders or smaller fines. Jersey Probation officers were required, as part of their assessment procedure, to screen all offenders using the LSI-R. LSI-R scores were then used to guide probation officer's disposition recommendations. The Jersey Probation Service guidelines stipulate that a binding over order, community service order or fine was recommended for offenders with LSI scores of 0-15. For LSI-R scores of 16 and over a recommendation of a probation order was made. The recommendation of treatment orders remained under the jurisdiction of the Alcohol and Drug Service. Consequently, treatment orders were recommended on the grounds of treatment need as opposed to criminogenic need.

Additional analysis of the mean scores of LSI-R and Recovery Capital for each of the court dispositions was undertaken. It was found that the only statistically significant difference in LSI-R, scores and Recovery Capital scores was amongst individuals who received a community service order, a fine or a binding over order as compared to other court dispositions such as probation orders and/or treatment orders or

custody. In effect, treatment orders and probation orders were targeted at offenders with a greater need and an increased risk of re-offending. Thus, these offenders were more likely to re-offend and probably did so in some cases despite access to treatment.

The non-significant impact of court disposition in the current study is of interest. There has been considerable debate around the issues of mandated treatment in terms of its efficacy in reducing drug related crime and the ethical parameters of coercing individuals into treatment. In light of the current results, it might be that such debates are unnecessary. In terms of responding effectively to drug related offending, it may be that court disposition is an erroneous starting point. Instead it may be that a move towards interventions that address the holistic needs of offenders, be this in the community or in prison, is a more productive way to go. Treatment will clearly have its part to play but as acknowledged by Gossop (2005), there is a need to be aware of the 'bigger picture' of a person's life.

Hypothesis four

Hypothesis four was that, although demographic, criminal and drug use factors would influence outcome, it was believed that Recovery Capital would be the strongest predictor of outcome. This hypothesis was upheld. In the first instance demographic, criminological and drug use variables and levels of Recovery Capital and its component parts, were analysed using survival analysis. The variables that were significant were then entered into a univariate analysis. The results of this univariate analysis showed that age, employment status, LSI-R score, number of prior offences, total time spent in prison, type of presenting offence and levels of Recovery Capital, and its component parts, were all statistically associated with outcome. However, a multivariate analysis of the selected variables revealed that, along with age, Recovery Capital was the best predictor of outcome. It is of significance that the comparative variables included the following: marital status, employment status, drug dependence, LSI-R scores, number of prior convictions, age of first offence, total time in prison, presenting offence type, one-to-one court mandated supervision and community service/fine court disposition. As will be appreciated, all of the above were found to be influential on outcome but in the final analysis, Recovery Capital and age were the two that were the strongest predictors.

Of interest is that in this study the multivariate analyses indicated that Recovery Capital was significantly and positively associated with outcome whereas LSI-R scores

were not. In order to explore the possibility that Recovery Capital and its component parts 'interfered' with the LSI-R these variables were removed. Even when Recovery Capital and its component parts were excluded and LSI-R was included with the full range of criminological, demographic and presenting variables, previously deemed to be associated with outcome, LSI-R failed to achieve significance. What is of considerable interest is that two components of Recovery Capital, namely Human and Cultural Capital, outperformed LSI-R. Recovery Capital has, when compared to the LSI, a broader theoretical base. Interestingly, the variables that essentially reflect this wider theoretical approach are Human and Cultural Capital. It is considered that the superiority of Recovery Capital as a predictive outcome variable over the LSI-R score is of great interest. LSI-R is, to date, the accepted gold standard for determining actuarial risk of re-offending; thus the superiority of Recovery Capital in the current results certainly merits its replication and for the use in criminogenic literature.

Concluding comment

The key implication of this study is that the social context of people who commit alcohol and drug related offences matters. Indeed, this context matters more in determining eventual outcome than any other single variable, bar age. Though, obviously, age and stage of life are reflected in the concept of Recovery Capital. The results of this study therefore represent a challenge to the prevailing view that the best response to alcohol and drug related offending is to mandate the offender into some form of alcohol and drug rehabilitation. In this study, the dispositions imposed by the court had little (if any) impact on re-offending and this included court mandated treatment. In the final analysis the best predictor of outcome was the level of Recovery Capital possessed by the offender at time of committing their offence.

The conundrum is that the literature is replete with research that demonstrates the effectiveness of treatment in reducing drug use per se and drug related offending (Gossop, 2005). However, the success of treatment in reducing drug use, and therefore, drug related offending, may not be as clear cut as it first appears. Saunders and Allsop (1985) articulated some of the drawbacks in attributing the successful resolution of drug use to treatment alone. In their discussion Saunders and Allsop argued that although individuals often reduce their drug use following a treatment episode, individuals' ability to maintain the gains they made in treatment are more dependent on factors that are external to the treatment they received.

There is a further problem that has been identified by Davies (1997). From interviews with over 500 drug users, Davies determined that at any time any drug user could be located in one of five drug use stages. The first was hedonistic drug use in which the drug user enjoyed his/her drug use and was relatively immune to advice. The second was a state marked by contradictoriness in which good drug use experiences were challenged by nasty ones. Davies found that such users were immune to advice. The third stage was that of addiction, in which users insistently spoke of 'having to use' and being 'unable to stop' their drug use because of their addiction. Such users Davies found were immune to advice. The fourth stage was one of inconsistency in which 'I can't stop' was replaced by 'I have to stop' and drug use was interrupted by sporadic attempting at quitting. Such users tended to seek out treatment. The final stage was a split stage that Davies encapsulated as the 'up and out' or 'down and out' stage. His words reflect the natural recovery literature that some drug users after years of use walk away whereas others are so defeated by their drug use that they succumb to on going use. The importance of all this is that Davies considered that the first three stages were about individuals "getting worse" and the final two stages as them "getting better". Controversially, he considered that this was a natural process upon which drug treatment had little impact. His perspective is perhaps to some extent supported by the current study.

As noted by the founders of 'Recovery Capital' Cloud and Granfield (2001) the implications of the natural recovery literature is that it suggests that treatment providers need to "pay closer attention of the personal attributes of their clients and the social environmental contexts in which their substance dependent clients are embedded" (p. 99). The importance that differing levels of social, personal and physical resources had on re-offending behaviour is clearly demonstrated by the results from the current study. Individuals deemed to have more personal and social resources either did not re-offend or re-offended less frequently than individuals with less of these resources. This finding was in keeping with the results of Granfield and Cloud's (2001) research that examined the role of Social Capital amongst 46 former alcohol and drug dependent persons who terminated their drug use without engagement in treatment. Granfield and Cloud found that the individuals in their study had managed to resolve their drug use without engaging in treatment because they essentially had high levels of Social Capital prior to and during their drug use and this "provided them with the essential resources to

negotiate conventional life while simultaneously participating, at varying degrees, in the life of the drug world" (p. 99).

The findings of the current study also support Andrews and Bonta's (1982) view that not all offenders present with the same level of need and therefore not all offenders require the same level of service provision. Granfield et al. (2001) have extended this view to the addictions field and argue for the importance of viewing treatment options along a continuum from least intrusive to most intrusive. They consider that levels of Recovery Capital could be a useful means of allocating treatment resources to clients. Clients with low levels of Recovery Capital are likely to benefit from more protracted and comprehensive interventions whereas individuals with higher levels of Recovery Capital are more likely to benefit from less intrusive and resource intensive interventions. The essence of this debate was eloquently summed up by Edwards (1982), "Therapeutic work is only likely successfully to produce movement when its efforts are in alignment with the real possibilities for change within the individual, his family and social setting. The basic work of therapy is largely concerned with nudging and supporting the movement along these 'natural' pathways of recovery. We need a far more developed sense of people's innate capacity for recovery and the possible dimensions of recovery rather than the belief that we can impose therapies on people who are to be marched along at our dictate. The clumsy therapist is like someone who tries to carve a piece of wood without respect for the grain, and therapy must always be matched to individual need" (p.178).

In view of the current results that indicate the important role that a person's level of Recovery Capital has on subsequent offending behaviour, it seems germane to refer to the community reinforcement work of Azrin, Sisson, Meyers and Godley (1982). Their approach involved the manipulation of environmental factors to facilitate and maintain change. The focus in this approach was to assist the client restructure or even establish enhanced relationships, occupational opportunities and social connections. The purpose of this was to improve the client's life to a sufficient extent that drinking became considerably less worthwhile. Indeed access to such improvements was made contingent on being abstinent. This approach has consistently been found to be better than more individual and psychotherapeutically focused programmes. It may be that this is the direction in which service providers need to move.

In summary, the current research findings are in keeping with much of the literature in the areas of drug use and criminality. Individuals presenting to both

treatment and/or criminal justice agencies have different levels of need and associated risks. This difference in need is largely accounted for by the social milieu in which clients exist. Although drug use clearly has an impact on a person's lifestyle and his or her criminal behaviour, it seems that a person's lifestyle, or social context has much more of an influence on a person's desire/need to use drugs and/or engage in criminal behaviour than any specific factor. Recovery Capital is the term that has been coined to describe the social milieu of an individual and comprises Human, Social, Cultural and Physical Capital. In the current research, each of these components parts of Recovery Capital was found to be significantly associated with outcome, but Recovery Capital when considered in its entirety was found to be more influential on outcome than its individual component parts. The results of the current study are in keeping with the insight of Saunders and Allsop, "there has developed a growing awareness that the social milieu of the client has greater impact upon outcome than any strategy devised in a clinic... the engine room of remission is within the social milieu of the individual". It is noted that the majority of the above cited studies were published in the 1980s. It is therefore salutary to consider that the themes contained therein have been reflected in the current study.

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Appendices

Appendix 1 Recovery Capital Measure

No.		Yes	No	?	Total
	Human Capital				
	Education				
1.	Is literate	1	0		
2.	Completed primary education	1	0		
3.	Completed secondary education to 15 years	1	0		
4.	Obtained qualifications at school	1	0		
5.	Participated in formal education after school	1	0		
6.	Completed formal education after school	1	0		
7.	Exhibited behavioural problems at school	0	1		
	Development				
8.	Had stable childhood (absence of DV, substance use, deaths, acrimonious divorce etc)	1	0		
9.	Had rewarding parental relationship	1	0		
10.	Had rewarding other relationship (e.g. sibling, aunty, grandparent, family friend, etc.)	1	0		
11.	Experienced physical/sexual abuse as a child	0	1		
	Attachment				
12.	Has capacity to form adult attachments	1	0		
13.	Maintains long term attachments (long standing partner, friend, acquaintance)	1	0		
14.	Has stable network of support	1	0		
15.	Is socially isolated	0	1		
	Knowledge mental ability				
16.	Able to manage everyday problems	1	0		
17.	Is able to set goals commensurate with own capacity	1	0		
18.	Has insight into problems	1	0		
19.	Has empathy for others (has regard for others and their welfare, capable of understanding feelings of others)	1	0		
	Personal characteristics				
20.	Has been assessed as having a low level of mental functioning (low IQ, possible brain damage)	0	1		
21.	Has current acute medical condition	0	1		
22.	Has history of chronic medical condition	0	1		

No.		Yes	No	?	Total
23.	Has a significant history of aggression? (has difficulty controlling temper, a significant proportion of offences are aggression related)	0	1		
24.	Copes well with stress/frustration (has coping strategies other than aggression, substance use)	1	0		
25.	Is a known victim of spousal abuse	0	1		
26.	Is a known perpetrator of spousal abuse	0	1		
27.	Frequently engages in recklessness, risk taking and impulsive behaviour	0	1		
28.	Has a good self-presentation (socially oriented and communicative)?	1	0		
	Mental health				
29.	Has a current mental health diagnosis (excluding alcohol and drug use)	0	1		
30.	Has ever had a mental health diagnosis (depression, anxiety, personality disorder)	0	1		
31.	Has engaged in self harm	0	1		
32.	Has attempted suicide	0	1		
33.	Has received psychiatric/psychological intervention	0	1		
	Adverse adult life experiences				
34.	Raped, sexually assaulted as an adult	0	1		
35.	Death, chronic illness of significant other	0	1		
	Substance Use				
36.	Commenced using cannabis prior to 15yrs	0	1		
37.	Commenced using heroin before 18 years	0	1		
38.	Is dependent on a substance (includes physical, emotional and psychological dependence)	0	1		
39.	Has more than 2 years problematic drug use	0	1		
40.	Has a drug conviction under age of 18 years	0	1		
41.	Is a User dealer	0	1		
	Employment				
42.	Currently employed	1	0		
43.	Frequently unemployed	0	1		
44.	Has lost work through use of drugs/alcohol	0	1		

No.		Yes	No	?	Total
45.	Has stable current work history (been in same job for 6mths +)	1	0		
	Total Human Capital				/45
	Social Capital				
	Family of origin				
46.	Has regular contact with family of origin?	1	0		
47.	Relationships with family of origin reinforce subject's current problematic lifestyle?	0	1		
48.	Views current relationships with family as positive	1	0		
	Procreation family				
49.	Is currently dissatisfied with relational circumstance	0	1		
50.	Has within last 6 months experienced acrimonious separation	0	1		
51.	Indication of current poor family functioning (e.g. involvement of children's service, domestic violence unit).	0	1		
52.	Has dependent offspring	1	0		
53.	Spouse has criminal involvement	0	1		
54.	Is part of a family unit	1	0		
	Employment				
55.	Permanent employee (1 year +)	1	0		
56.	Has credibility to protect	1	0		
57.	Expresses interest/commitment towards their employment	1	0		
58.	Has smooth work relationships	1	0		
	Support from agencies				
59.	Has had appropriate contact with alcohol and drug service	1	0		
60.	Has had appropriate contact with support agency e.g. AA NA	1	0		
	Friends Support network				
61.	Appears to have criminal acquaintances	0	1		
62.	Appears to have criminal friends	0	1		
63.	Seems to associate with those who take illegal drugs (speed, heroin)	0	1		

No.		Yes	No	?	Total
	Accommodation/community functioning				
64.	Has a recent history of unstable accommodation	0	1		
65.	Subject currently manages their finances effectively	1	0		
66.	Subject has constructive leisure pursuits	1	0		
67.	Subject able to use alcohol and welfare services	1	0		
	Total Social Capital				/22
	Cultural Capital				
	Connection to Jersey				
68.	In Jersey 3+yrs	1	0		
69.	Born in Jersey	1	0		
70.	Residentially qualified (born & educated in Jersey or lived in Jersey for 20 years)	1	0		
71.	Family of origin in Jersey	1	0		
72.	Family of procreation in Jersey (if no children in Jersey - 0)	1	0		
73.	Educated in Jersey	1	0		
	Community connection				
74.	Has adult networks in Jersey	1	0		
75.	Engages in organised Jersey activities	1	0		
76.	Has long term acquaintances in Jersey (3+yrs)	1	0		
77.	English is first language	1	0		
78.	Has partner in Jersey	1	0		
	Connection to drug using community				
79.	Socialises almost exclusively with substance users	0	1		
80.	Spends most of spare time intoxicated	0	1		
81.	Has a long standing connection with drug users in Jersey (3+yrs)	0	1		
	Deviance				
82.	Has criminal offence other than drug and alcohol related offences	0	1		
83.	Has a history of deviance/behavioural problems in adolescence	0	1		
84.	Has been incarcerated	0	1		
85.	Has less than 10 convictions	1	0		

No.		Yes	No	?	Total
	Permanency in Jersey				
86.	Employed in Jersey	1	0		
87.	Has permanent address in Jersey	1	0		
	Accommodation				
88.	Is homeless if yes go to question 93, if no go to next question	0	1		
89.	Lives in a hostel, campsite, crashing with friend if yes go to question 93, if no go to next question	0	1		
90.	Lives in temporary accommodation –guest house, sharing with friend/family, if yes go to question 93, if no go to next question	0	1		
91.	lives in long term rental property if yes go to question 93, if no go to next question	0	1		
92.	Lives in private house (i.e. house is owned by them)	0	1		
	Total Cultural Capital				/25
	Physical Capital				
	Assets				
93.	Owens house	1	0		
94.	Owens business/own company	1	0		
95.	Has savings	1	0		
	Income				
96.	Earns over £10,000	1	0		
97.	Earns over £20,000	1	0		
98.	Earns over £30,000	1	0		
	Financial situation				
99.	Has serious financial problems (debts)	0	1		
100	Reliant on welfare/social assistance	0	1		
	Total Physical Capital				/8
	Total Recovery Capital				/100

Appendix 2 Scoring aid for Recovery Capital Measure

Question	Scoring guide for Recovery Capital Measure
1.	Score 1 if client attended school and his literacy is not otherwise questioned.
5.	Score 1 if client engaged in any further education for a month or more even, if they did not complete the qualification (i.e. attended Highlands college, apprenticeships)
6.	Score 1 if client <i>completed</i> any type of qualification after school, this includes apprenticeships and other trade qualifications
7.	Score 0 if client exhibited behavioral problems at school (e.g. disruptive, aggressive, truancy, saw a psychologist etc). If no behavioural problems at school are mentioned score 1.
8.	Score 1 if client enjoyed a stable childhood. Score 0 if domestic violence, sexual abuse, death of parent, serial foster care, acrimonious divorce occurred.
9.	Unless otherwise stated (e.g. client has maintained contact with a parent, client speaks of a positive relationship with a parent) assume that clients who experienced an unstable childhood did not have a rewarding relationship with either parent and score 0.
10.	Unless otherwise stated assume that clients who experienced an unstable childhood did not have a rewarding relationship with another family member and score 0.
11.	If physical/sexual abuse as a child not mentioned score 1.
12.	Score 1 if client seems able to form adult attachments (e.g. sibling, friend, partner, relative, work colleagues)
13.	Score 1 if client has or has had an adult attachment lasting over 1 year.
14.	Score 1 if client has regular contact with stable others (i.e. 3 or more individuals). For example a general sense that the client is part of the community and has people that he/she can turn to.
15.	Score 1 if client has a regular social contact with family member(s)/partner /friends or there is a general sense of client belonging to community.
16.	Score 1 if client is able to identify and manage everyday problems e.g. evidence in adult life of capacity to address everyday problems.

17.	Score 1 if report indicates that the client is realistic in their ability to set goals for themselves e.g. has realistic expectations of themselves.
18.	Score 1 if client demonstrates insight into their problems e.g. able to identify link between substance use and criminality/personal problems.
19.	Score 1 if client is able to express remorse about the impact that their offending has on others / has general ability to be empathic.
20.	Score 1 if the client's IQ, mental functioning is not mentioned specifically.
21.	Score 1 unless client has acute medical condition e.g. broken leg, road traffic accident injury.
22.	Score 1 unless client has a history of a chronic medical condition e.g., Hepatitis C, heart disease etc.
24.	Score 1 if client can tolerate stress frustration without problematic use of drugs/ alcohol/ aggression (i.e. has presence of alternative coping strategies)
25.	Score 1 if domestic violence is not mentioned.
26.	Score 1 if domestic violence not stated in report.
27.	Score 0 if client has a history of engaging in reckless behaviour irrespective of being intoxicated.
28.	Score 1 if client is socially oriented and communicative.
29.	Score 0 if client has received a mental health diagnosis excluding alcohol and drug use.
30.	Score 0 if client has ever received a mental health diagnosis excluding alcohol and drug use. If none mentioned score 1.
31.	Score 1 unless self harm behavior is noted.
32.	Score 1 unless suicidal behaviour is noted.
33.	Score 0 if client has ever had formal contact with psychologist/psychiatrist.
34.	Score 1 if rape or sexual abuse as an adult is not specifically mentioned.
35.	Score 0 if death or illness of significant other is mentioned. Score 1 if these are not mentioned.
36.	Score 1 if the age of commencing cannabis is not stated.
38.	If client is physically, emotionally, psychologically dependent, acknowledges a daily habit score 0, 'binge' use does not count.
39.	Score 0 if client has more than two years of problematic substance use e.g. criminality, relationship troubles, dependence.

43.	Score 0 if client has a history of losing jobs and spending frequent amounts of time unemployed.
44.	If information not mentioned score 1.
45.	Score 1 if client has kept a job for 6 months or more.
46.	Score 0 if current communication with family of origin is not mentioned
47.	Score 0 if family of origin engages in deviant behaviour and/or problematic substance use.
48.	Try to gauge an impression of client's perception of their family. If they maintain regular contact and it is not otherwise stated assume they view family relationships as positive and score 1.
50.	If client dissatisfied with current relational circumstances score 0 e.g. doesn't like being single, relationship strife, etc.
52.	Score 1 if client has child/children below the age of 18 years of age.
53.	Score 0 if partner/spouse engages in illegal activity including illegal drug use. Score 1 if client does not have partner.
54.	Score 1 if client lives with dependent children (this includes living with a partner who has children, a single parent living with children).
56.	Score 1 if client has a reputation as a reliable worker/upstanding citizen. Also score 1 if client has a history of being a reliable worker with no recent history (within last 5 years) of employment difficulties as a result of deviance and/or substance misuse.
57.	Score 1 if client is committed to their employment / motivated to maintain work seems to derive pleasure/job satisfaction from working. If client unemployed score 0.
58.	Score 1 if client gets along with superiors and colleagues.
59.	Score 1 if client has appropriately attended an alcohol and drug agency. If client has not attended alcohol and drug services, but does not warrant their intervention still score 1. Detoxes/contact with alcohol and drug workers whilst in prison do not count.
61.	Score 0 if the report mentions deviant acquaintances.
62.	Score 0 if the report mentions deviant friends.
63.	Score 0 if client associates with peers/acquaintances that misuse substances (i.e. has contacts with the drug using community).

64.	If client is temporarily staying with a friend/family member or has recently moved out of their usual accommodation score 0. This includes being remanded in prison.
65.	Score 1 if client has accommodation and money for food and essentials.
66.	Score 1 if client engages in a constructive leisure pursuit.
67.	Score 1 if subject has been in Jersey for more than 6 months.
70.	Score 1 if client born in Jersey or has lived in Jersey for 20 + years.
72.	Score 0 if client does not have a family of procreation in Jersey.
74.	Score 1 for clients who live, work and have established themselves in Jersey. E.g. someone who is known, has a history in Jersey.
75.	Only score 1 if client has established constructive hobbies, interests that they participate in Jersey.
76.	If client in Jersey for 3+ years score 1, unless client is socially isolated, in which case score 0.
77.	Score 0 if client was born in, and predominantly raised, in a non-English speaking country and/or an interpreter was required.
78.	Score 1 if client has a current partner in Jersey.
79.	Score 0 if client spends almost all of their time with substance users e.g. Clients who are entrenched in their drug use, this could include user dealers, street drinkers.
80.	Score 0 if most of time is taken up with using substances or obtaining substances. This does not include weekend/binge drinkers.
81.	Score 1 if client does not regularly use illegal drugs or has made changes to get away from drug using friends.
82.	Speeding and minor traffic offences do not count.
87.	Score 1 if client is based in Jersey and views it as home. Score 0 for clients who are seasonal workers, tourists or visiting friends
96.	Include allowance received from partner if client receives one.
99.	Score 0 if client has significant debts.
100.	Score 0 if client receives welfare benefits

Appendix 3 Log Rank Test Scores

Variable	Log rank	df	p value	significance
Demographic				
Gender	1.62	1	0.203	NS
Age*	13.58	2	0.001	S
Marital status	0.43	1	0.837	NS
Employed*	14.46	1	0.000	S
Drug Use				
Drug of choice*	3.10	1	0.079	NS
Drug dependence*	3.60	1	0.058	NS
Drug treatment				
In voluntary treatment	0.90	1	0.763	NS
Treatment voluntary/mandated	1.47	1	0.225	NS
Historical Criminological				
Age first conviction*	2.71	1	0.099	NS
No. prior conviction*	7.71	2	0.021	S
Violent prior	0.46	1	0.496	NS
Alcohol prior	0.03	1	0.899	NS
Drug prior	1.86	1	0.172	NS
Total time in prison*	5.68	2	0.058	NS
Current Criminological				
Age at presenting offence*	13.58	2	0.001	S
No. presenting offence	1.91	1	0.167	NS
Generic presenting offence*	15.68	5	0.008	S
Alcohol or drug presenting	2.47	1	0.116	NS
LSI-R scores*	19.84	3	0.000	S
Recovery Capital				
Recovery capital*	29.74	2	0.001	S
Human capital*	16.96	1	0.000	S
Social capital*	11.61	1	0.001	S
Physical capital*	15.15	1	0.000	S
Cultural capital*	13.96	1	0.000	S

Variable	Log rank	df	p value	significance
Court Disposition				
Custodial	0.01	1	0.919	NS
Probation	0.44	1	0.506	NS
Treatment order	1.06	1	0.303	NS
CS / Fine*	3.58	1	0.059	NS
Binding over order	0.05	1	0.829	NS
One-to-one supervision*	2.74	1	0.098	NS

* Variables that were included in the stepwise variable selection (backward elimination) multivariate analyses.