RECIDIVISM RATES IN A CUSTODIAL POPULATION: THE INFLUENCE OF CRIMINAL HISTORY, OFFENCE & GENDER FACTORS

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ABSTRACT

This research examines in detail the interactions between the personal characteristics of offenders as they bear on reoffending patterns. By focussing on the reoffending of released prisoners, this research provides insight into the behaviour of offenders who are at a relatively 'developed' stage of their criminal career. This paper argues that recidivism needs to be understood as a complex, dynamic feature of criminal career patterns, that it is influenced by an array of factors, only some of which are under the control of criminal justice agencies, and that the use of recidivism as a measure of system effectiveness needs to take into account these factors if it is to provide a meaningful measure of system performance. Accordingly, the use of recidivism indices as evaluative or performance measures must take into account the multi-variate nature of the social and personal factors associated with criminality. The significance of this argument is demonstrated by considering one of the most obvious features of recidivism: the differential rates of offending and reoffending exhibited by men and women.

The study followed the recidivism patterns of 838 offenders on their release from Victorian prisons between May 1985 and December 1986, for a period of seven-and-a-half years, using officially recorded data. Four measures were used to examine recidivism: re-conviction, re-imprisonment, time to fail and re-offending rates. In the seven years after their release, a total of 620 of the 838 prisoners in the full sample (74%) were reconvicted of at least one offence. Just over one-quarter of all releasees had been re-convicted of a further offence within three months of release, one third were re-convicted within five months of release, and by the end of the first year, the proportion re-convicted reached one-half. Of the original 838, a total of 454 (54.2%) were re-imprisoned at least once over the seven year follow-up period. This represents 73.2% of those re-convicted. Figure 2 plots the cumulate re-imprisonment curve over the seven years. In the first four months, one-fifth of releasees had returned to prison, and after six months this had risen to one-quarter. At the end of the first year, just over one third had been re-imprisoned. In the second year, an additional 9% were re-imprisoned, and a further 4% in the third year.

Other findings of the research were:

- male and female releasees were equally likely to be re-convicted and re-imprisoned;
- releasees who committed their first offence when aged 14 years or less were much more likely to be re-convicted and re-imprisoned than those whose crminal careers started after they were 18;
- releasees with many prior offences were much more likely to be re-convicted and re-imprisoned than those who had only a few priors;
- offenders convicted of property offences were much more likely to be re-convicted and re-imprisoned than those who had been convicted of homicide.

1. INTRODUCTION

A central issue in criminal justice policy is the differential effectiveness of sentences, programs or other interventions in achieving criminal justice goals. The search for systematic means of measuring effectiveness turns inevitably to the issue of recidivism. Recent proposals arising out of the 1995 Review of Commonwealth/State Service Provision, to use measures of recidivism as an index of criminal justice agency performance have given this issue a renewed relevance within Australian criminal justice administration. This paper considers the theoretical and methodological basis of recidivism, and uses reoffending data from a sample of Victorian prisoners in order to examine what value should be placed on recidivism measures as an index of custodial performance. The paper presents data on 838 prisoners released from Victorian prisons in the mid to late 1980's and followed-up for seven years. It is particularly concerned with the way that the latency and frequency of reoffending co-vary with a range of personal and offending variables, including the sex of the offender, the offence for which they were last imprisoned, the age at which their criminal career commenced, and the number of prior offences for which they have been convicted.

Performance measurement in the criminal justice system

The 1995 Review of Commonwealth/State Service Provision (Steering Committee for the Review of Commonwealth/State Service Provision, 1995, p. 29) was the first in a series of performance monitoring exercises undertaken under the auspices of the Council of Australian Governments, comprising the Prime Minister, State Premiers and Territory Chief Ministers. The Review collected and published information relating to the effectiveness (that is, the achievement of service delivery outcomes) and efficiency (that is, the production of more or better quality services with existing or fewer resources) of a range of government funded services, including police, courts administration and corrections. The objectives of the exercise were to provide greater transparency of performance and accountability, to assist governments in clarifying and defining the objectives and responsibilities of service provision, to improve service delivery through 'yardstick comparison' and to assist in the identification of

'best practice' approaches and models of service delivery. The Australian Review follows on from similar governmental performance reviews such as the Citizen's Charter in the United Kingdom and the National Performance Review in the USA.

The Corrective Services Working Group determined that "the overarching aim of Corrective Services is to manage offenders to reduce the impact of offending", and following from this, that the degree of reoffending by prisoners was a key index of effectiveness of both the criminal justice system and of corrective services specifically.

> Corrective Services in each jurisdiction is part of a wider criminal justice system encompassing courts and police. The boundary between the objectives pursued by each element of the system and the macro objectives of the system as a whole are not always clear. The impact of corrective services on the incidence of reoffending by prisoners after their release (that is recidivism) has provided a focus for the question. All jurisdictions agree that reducing the incidence of recidivism may be one of a number of objectives of the criminal justice system. Most jurisdictions also view it as an objective of corrective services, but acknowledge that many factors outside the control of corrective services also affect the level of recidivism. (Steering Committee for the Review of Commonwealth/State Service Provision, 1995, p. 29)

Four out of seven corrective service agencies were able to provide statistical data on the percentage of released offenders who returned to corrections within two years. Two year recidivism rates were 36% in Queensland, 42.6% in New South Wales (cited from Thompson, 1994), 44.1% in South Australia and 49.2% in the Northern Territory. Victoria and Tasmania were unable to provide data on recidivism. It should be noted that there was not universal agreement on the use of recidivism rates as an index of agency performance. Western Australia argued that the incidence of recidivism was not relevant to the objectives of its corrective services agency and accordingly did not provide data.

The use of recidivism measures as an index of agency performance is predicated on two assumptions. Firstly, that the reduction of reoffending is one of the objectives that the criminal

justice system should seek to achieve, and secondly that agency-specific measures of rates of reoffending or reconviction are an equitable measure of the achievement of this objective. This paper is primarily concerned with examining the second of these issues. Nevertheless, it is useful to consider at least briefly the commonly held understanding that one of the ends that the criminal justice system should seek to achieve is a reduction in rates of offending through the rehabilitative effects of custodial and non-custodial programs.

Recidivism and the rehabilitative ethic

The notion of rehabilitation is based on a model of criminal behaviour as a form of social malfunction that can be rectified through reform, re-education or treatment (Von Hirsch, 1976). According to this model, a successful criminal justice program is one that alters the behavior of those offenders passing through it, such that the frequency and/or severity of their offending declines. Thus, the level of recidivism - further offending resulting in conviction or imprisonment - provides an outcome measure of the effectiveness of both the criminal justice system in general and its constituent elements. During the decades of the 1950's, 60's and 70's, the rehabilitative ethic, and the positivist concept of the nature of criminality that underwrote it, provided the dominant view of the purposes of the criminal justice system. However, this view did not incorporate a precise specification of the nature of rehabilitative interventions, with the result that

> ".. any intervention, even the daily routine of the prison itself (milieu therapy) was said to be rehabilitative .." (Von Hirsch, 1985, p.4)

One of the consequences of this approach was the belief that measures of recidivism could be applied universally as effectiveness measures of all forms of correctional and other criminal justice programs. The watershed of the rehabilitative ethic was probably Martinson's exhaustive but flawed review of the effectiveness of US criminal justice programs. Martinson gave primacy to the achievement of rehabilitative outcomes:

"American prisons .... have stood or fallen in public esteem according to their ability to filfill their promise of rehabilitation" (Martinson, 1974, p.22)

According to Martinson, the ability to show that a rehabilitative program had a direct and measureable impact on recidivism became the principal criterion to determine whether programs should prosper or fail. The central element in Martinson's (1974) argument that "nothing works" was that the programs he studied could not demonstrate a reduction in rates of recidivism. Martinson's conclusions are now recognised to have been based on unsound evaluation methods and an overly simplistic understanding of program outcomes (Gendreau & Ross, 1987). Nevertheless, Martinson was instrumental in focussing attention on the performance of criminal justice programs, and ultimately in bringing about greater sophistication in evaluation techniques.

The rehabilitative paradigm dominated throughout the decades of the 1960's and 1970's, but ultimately came under serious criticism from several directions. In addition to the Martinsonian critique of effectiveness, it was variously argued that the reform enterprise involved a violation of rights, focussed on the individual and hence ignored the social causes of criminality, was too ambitious, and was incompatible with more important criminal justice objectives of punishment, deterrence and incapacitation (Cohen, 1979).

While the rehabilitative ideal appears to have been wholly discarded in the USA and substantially supplanted in Australia by less optimistic views of criminality, the pressure for accurate, "scientific" measurement of reoffending remains a key feature of criminal justice administration. This paper argues that recidivism needs to be understood as a complex, dynamic feature of criminal career patterns, that it is influenced by an array of factors, only some of which are under the control of criminal justice agencies, and that the use of recidivism as a measure of system effectiveness needs to take into account these factors if it is to provide a meaningful measure of system performance. Accordingly, the use of recidivism indices as evaluative or performance measures must take into account the multi-variate nature of the social and personal factors associated with criminality. The significance of this argument is demonstrated by considering one of the most obvious features of recidivism: the differential rates of offending and reoffending exhibited by men and women.

*crime is disproportionately committed by men. This trend is found in both official (police data) and unofficial (self-report) sources of data, although the difference between men's and women's criminal behaviour tends to be lower in unofficial data sources (Hindelang 1979, Nagel and Hagan, 1983). Figures published in the 1991/92 Victoria Police Statistical Review, indicate that the adult female to male ratio for major crime offenders is 1: 3.5 (p.94).

Indeed scholars have argued that sex is the most important variable associated with crime. For instance Sutherland and Cressey (cited in Heidensohn, 1987:88) note that:

> *Sex status is of the greater statistical significance in differentiating criminals from non-criminals than any other trait. If you were asked to use a single trait to predict which children in a town of 10,000 people would become criminals, you would choose sex status as the trait and predict criminality for the males and non-criminality for the females.*

Heidensohn (1987:88) agrees with this assumption and asserts that sex is "*the* crucial variable in predicting criminality'.

Unfortunately it was not until the late 1960s that female criminality became a major focus of criminological research and debate. Consequently what is known about the patterns of female criminality and theories of female criminality pales in comparison to male criminality as Ngaire Naffine (1981:70) comments:

> *Criminology texts purporting to deal exhaustively with theories of criminality merely refer to the female offender (as an obvious afterthought) in a footnote or appendix.*

This report provides empirical data concerning the criminal careers[1] of a selective group of persistent, male and female offenders, and examines the differences in the criminal behaviour

[1] A criminal career is defined as "a longitudinal sequence of offenses committed by an offender who has a detectable rate of offending during some period"(Blumstein et al., 1988a:2). It "may consist of a single, undiscovered, venial lapse or a level of sustained involvement in serious crime" (Petersilia, 1980:321). Consequently it is distinct from the term 'career criminal'

of males and females. It is acknowledged that the contribution of this study is minimal in light of what still remains to be known about the criminality of females.

The use of recidivism as an index of criminal justice program or agency "performance" means that system measures are inextricably tied to the behaviour of the prisoners or offenders involved. This research examines in detail the interactions between the personal characteristics of offenders as they bear on reoffending patterns. By focussing on the reoffending of released prisoners, this research provides insight into the behaviour of offenders who are at a relatively 'developed' stage of their criminal career. However, it should be borne in mind that such persons constitute only a tiny fraction of all offenders. Accordingly, the results of this research should not be generalised to the whole range of criminal offenders.

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which refers to a specific group of offenders, typified by Gibbon's 'heavies' who make their livelihoods from illegal pursuits and engage in illegal activities on a full-time basis (Gibbson, 1968).

2. DEFINITIONAL & METHODOLOGICAL ISSUES

Defining recidivism

The term recidivism is derived from the latin term 'recidivus' meaning 'falling back'. One interpretation of this is that any first time offender who commits another crime is a recidivist. The Australian Pocket Oxford Dictionary however interprets recidivism as an "habitual relapse into crime" (p.666). As Biles (1985:1) notes, "the number of persons who would be embraced by the first (definition) would be considerably larger than would be the number embraced by the second". While both definitions of recidivism are used in the literature, the former definition is the more prevalent of the two. Thus, a recidivist can be most generally defined as an offender who has previously been convicted of an offence.

Nevertheless, there are circumstances where a narrower definition may be appropriate. If one is interested in the reoffending of serious offenders, it may be inappropriate to invoke the label of recidivist for a releasee who is charged with indecent language or speeding. However, if one is interested in delinquency, the commission of a minor summary offence may be an adequate criterion for recidivism. In addition, there are some offences, such as failure to appear for a court case, or resisting arrest, which in their own right constitute a questionable basis for defining an offender as a recidivist. A further problematic issue is whether or not to include technical violations of parole or probation orders in recidivism studies. If the study specifically aims to measure the proportion of offenders who violate the conditions of their orders without committing new offences, then technical violations must be considered as recidivism. However, for studies which focus on the commission of new criminal acts as recidivism, the inclusion of technical violations is probably inappropriate. A more restrictive definition of 'relapse into crime' is the commission of an offence of equal or greater seriousness. Arguably an armed robber that reoffends by shoplifting is a qualitatively different recidivist than one who reoffends by committing a homicide.

Recidivism amongst populations of serious offenders needs to be seen as more complex than just reoffending on a single occasion, and it may also be appropriate to draw upon the concepts applied in criminal career research. A criminal career is defined as "a longitudinal sequence of offenses committed by an offender who has a detectable rate of offending during some period"(Blumstein et al., 1988a:2). It "may consist of a single, undiscovered, venial lapse or a level of sustained involvement in serious crime" (Petersilia, 1980:321). Consequently it is distinct from the term 'career criminal' which refers to a specific group of offenders, typified by Gibbon's 'heavies' who make their livelihoods from illegal pursuits and engage in illegal activities on a full-time basis (Gibbon, 1968).

Measuring recidivism[1]

Rearrest, reconviction, reimprisonment

A different rate of recidivism will be returned depending on the point within the criminal justice process at which the definition of 'relapse into crime' is set: rearrest, reconviction and reimprisonment. To date, Australian recidivism studies of adult offenders have focused on either reconviction or reimprisonment (NSW Bureau of Crime Statistics, 1977; Burgoyne, 1979; Howard, 1984; Broadhurst and Maller 1990, 1991, Thompson, 1995).

There are at least three ways in which measures of recidivism will vary depending on whether rearrest, reconviction or reimprisonment is used as the criterion. Simply as a result of the differing frequencies of arrest, conviction and imprisonment as justice system events, a rearrest measure will generate a higher rate of recidivism than a reconviction measure, which in turn will generate a higher rate than a reimprisonment measure. Imprisonment, and to a lesser extent conviction measures will give a lower probability of a Type 1 error, where individuals are incorrectly labelled as recidivists. Conversely, the probability of a Type II error, where offenders who should be labelled as recidivists are not, increases when conviction and imprisonment measures are used (Blumstein and Larson, 1971). Finally, information about

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[1] This section draws upon a paper *Issues in Receidivism Studies* (Novenber 1993), prepared for the Victorian Bureau of Crime Statistics & Research by Tricia Guanieri. Note that a further discussion of measurement issues is given in the Methodology chapter of this report.

event latencies becomes more corrupted with conviction and imprisonment measures. For instance, in measuring time to first reoffence, defining reoffence in terms of rearrest rather than reconviction results in a more accurate measure, as a smaller proportion of the time delay which can be attributed to the criminal justice system (for example, through trial delays) is included in the measurement.

Time to fail/Reoffending rate

Recidivism can also be viewed in terms of time to fail, which indicates the time lapse before the offender commits a further offence (Burgoyne, 1979; Broadhurst and Maller 1989; Beck, 1989; NSW Bureau of Crime Statistics, 1977). Arguably an offender who commits an offence within 4 months of the previous offence can be considered to be less successful than one who reoffends after a period of 2 years has elapsed. A related issue is the average time lapse between episodes of reoffending; that is, how frequently an offender reoffends within a specified time period. An offender who reoffends 12 times in a given period should score more highly on an index of recidivism than an offender who only reoffends once within the same time period.

Use of official records

It is well known that official records do not provide a true representation of criminal behaviour and frequently underestimate criminal behaviour. This occurs for several reasons: not all crime is reported to police; all reported crime is not solved, and finally human error contributes to incomplete police records. Furthermore, at any one time official records contain a number of biases. Whether or not a person is charged with an offence may be dependent on policing practices, police discretion and current policy issues. The probability of arrest varies among offence types, offenders, and the involvement level of an offender in crime (Petersilia 1980:334).

Brenner and Carrow (1976) note the difficulties in using official records in criminological research as a result of

"... under-representations of actual criminal activity in arrest and conviction processes (lead to) a systematic bias in the typology of the criminal population. The criminal with a lengthy arrest or recidivism record is .. the hapless, comparatively unintelligent, and criminally unsophisticated and poorly connected individual." (p.31)

Follow-up periods

The length of the follow-up period of studies investigating recidivism have varied considerably. For example, a number of American studies have restricted their follow-up periods to three years (Illinois Criminal Justice Department, 1987; Beck, 1989), while others studies have followed subjects for 5 years (Burgoyne, 1979), 10 years (NSW Bureau of Crime Statistics, 1977) and 12 years (Broadhurst and Maller, 1990). The most recent Australian study (Thompson, 1995) used a relatively short follow-up period of 2 years.

The American Advisory Commission on Criminal Justice recommends a minimum follow-up period of three years, as empirical studies have indicated that most prisoners reoffend within the first three years of their release from prison (Maltz, 1984:22). In a recent study undertaken by the current research (Guarnieri, 1993), little was gained by extending the study beyond a three-year follow-up period when recidivism was measured in terms of the proportion of offenders who failed (reconviction, reimprisonment).

Although the "true" recidivism rate will necessarily increase as a function of an extended follow-up period, the importance of this factor is undermined by the use of recidivism as a comparative measure (Waldo and Griswold, 1979:233). In deciding the length of the follow-up period, consideration must also be given to the aims of the study. For example if recidivism is used as an evaluative measure of a program an extended follow-up period might be needed to assess the delayed effect of the program (Waldo and Griswold, 1979:232). Similarly, in investigating difference between two groups of offenders, the initial difference may disappear with time. A study by the NSW Bureau of Crime Statistics (1977) found that although multiple offenders were reconvicted sooner than first offenders, after five years the reconviction rate was not substantially different. For most studies, the length of the follow-up period will ultimately be determined by such considerations as time and financial constraints.

One final point concerning the follow-up time is the existence of 'censored' data (Broadhurst and Maller 1990, 1991). Censored data is defined as those cases in which offenders have not reoffended within the follow-up period, but still have the potential to do so. To account for censored data, studies have calculated the probability of offenders reoffending within a certain time period. One technique used to do this is the computation of Life Tables. For studies with a short follow-up period, a more accurate measure of recidivism will be obtained if such data is take into account.

3. CORRELATES OF RECIDIVISM

Empirical studies investigating the correlates of recidivism date back to 1923 (Pritchard, 1979:15). Since then there has been a proliferation of studies investigating a wide range of variables which may influence the continuation of a criminal career including: socio-demographic factors (education level, race, age, employment status); personal characteristics (intelligence, personality type); prior criminal history (age at first offence, number of prior arrests/convictions, type of prior offences); past correctional and sentencing history (prior imprisonments, breaches of orders). A discussion of all these variables is beyond the scope of this paper and only those variables which have been the most consistently associated with recidivism in empirical studies will be discussed, namely age, prior criminal history, and prior sentencing and correctional history.

Like the well-known association of age to the incidence of crime, studies have found that as an offender increases in age, the less likely he/she is to continue his/her criminal career. For instance, in a sample of 1365 offenders convicted of an offence in NSW in 1965, four out of five offenders under the age of 16 years went on to commit a further offence during the 10 year follow-up period. The recidivism rate declined to just over 50 percent for those aged between 19-25 years, and less than a third for those over 40 years of age (NSW Bureau of Crime Statistics, 1977). Similar results were obtained from a U.S study of all prisoners released from custody in 11 States in 1983. When releasees were grouped by the number of prior adult arrests, these age differences in recidivism were found to persist within each prior arrest category. Releasees who had only one prior adult arrest and were aged 30 years or more on release, were found to have the lowest recidivism rate of all (U.S. Bureau of Justice Statistics, 1989).

Prior criminal history, encompassing the number of prior arrests/convictions and the age of first offence/conviction, has not only been consistently related to recidivism in empirical studies, but it has also proved to be a strong correlate of recidivism. Pritchard (1979) reviewed 71 recidivism studies, involving 177 independent samples of offenders, and found that the presence or number of prior adult convictions was related to recidivism in 99 of 116

studies in which it was investigated, while age at first arrest was related to recidivism in 77 of 95 studies which investigated its influence on recidivism. Furthermore, Burgoyne (1979d) found the number of prior criminal convictions and age at first conviction to be the strongest correlates of recidivism in a sample of robbers released from Victorian prisons between January 1972 and December 1973. Specifically, a higher recidivism rate was found for those offenders with a greater number of prior convictions, and those whose first conviction occurred at an early age.

Similar results were reported when prior offence history was defined in terms of the number of prior adult arrests (U.S Bureau of Justice Statistics, 1989)[2]. The study found that the more extensive a releasee's prior adult arrest record the higher his or her probable rate of recidivism. Of those releasees with only one prior adult arrest, 38.1 percent were rearrested during the three-year follow-up period compared to 82.2 percent of releasees with 16 or more prior adult arrests. The number of prior adult arrests remained a strong predictor of recidivism even when age at release from prison, sex, and race and the number of prior imprisonments (Illinois Criminal Justice Information Authority, 1985) were taken into account .

Finally, empirical studies have found that offenders who have a prior term of imprisonment (U.S Bureau of Justice Statistics 1984, 1989; Burgoyne 1979d), have been wards of the state, or have received a number of prior probations orders (Burgoyne 1979d) show high levels of recidivism, suggesting that prior sentence and correctional history is also a correlate of recidivism.

Sex specific studies of recidivism

Studies which have investigated sex differences in recidivism rates have consistently found that female offenders are much less likely to reoffend than their male counterparts. This trend persists in overseas and Australian data (refer Table 1 - *see next page*), irrespective of whether the sample are prisoners or offenders in general. This pattern is also apparent regardless of the

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2 An adult arrest was defined as one "that occurs when an individual is of adult age, as defined by the State law, or when the individual is a juvenile but is charged or tried in court as an adult"(U.S Bureau of Justice Statistics 1989:7).

TABLE 1

STUDIES OF RECIDIVISM INCLUDING SEX AS PREDICTOR VARIABLE

STUDY & DEFINITION OF RECIDIVISM	SAMPLE & FOLLOW-UP PERIOD	FINDINGS
US Bureau of Justice Statistics (1984) *United States of America* Reimprisonment	Offenders released from prison in 5 US States: California : Georgia : Massachusetts: New York: North Carolina : 3 year follow-up	Percentage returned to prison: Males / Females 31.4% / 19.3% 36.3% / 16.8% 27.0% / 23.0% 36 6% / 12.1% 31.6% / 22.5%
US Bureau of Justice Statistics (1989) *United States of America* Rearrest Reconviction Reimprisonment	1600 prisoners released from prison in 11 states in 1983 Females = 5.9% Males = 94.1% 3 year follow-up	Male releasees more likely to be recidivists (refer Table 2) When prior arrest records were considered, female releasees had a lower recidivism rate than males in all but the 7-10 arrests category (refer Table 3)
Van Der Werff (1981) *Netherlands* Reconviction	1701 offenders convicted of a serious offence in 1966 6 year follow-up	Female reconviction rate 13% Male reconviction rate 44% Sex difference persisted by category of offence
NSW Bureau of Crime Statistics & Research (1987) *Australia (New South Wales)* Reconviction	1365 offenders convicted in NSW in 1965: females =154, males = 1210 10 year follow-up	Female reconviction rate 30.5% Male reconviction rate 49.6%
Broadhurst & Maller (1990) *Australia (Western Australia)* Reimprisonment Time to reimprisonment	16,381 prisoners released from WA prisons between 30 June 1975 and 30 June 1987 Maximum 12 year follow-up	Probability of reimprisonment for non-aboriginal msales 45%, and 36% for non-aboriginal females. Similar sex difference observed among aboriginal offenders. Median time to reimprisonment longer for females, irrespective of race. Age at first imprisonment strongly related to recidivism.

how recidivism is defined. For instance the U.S Bureau of Justice Statistics study (1989) investigated the recidivism rates of 108,580 offenders (of which 5.9 percent were women), released from prison in eleven States in 1983. Across three definitions of recidivism (rearrest, reconviction or reincarceration) female releasees showed lower recidivism rates than male releasees (Table 2). Broadhurst and Maller (1990:89) found that this sex difference persisted even when recidivism is defined in terms of time to fail (reincarceration), with non-aboriginal female releasees exhibiting a median time to fail of 23.4 months compared to 17.6 months for their male counterparts. Similar results were apparent for aboriginal releasees.

Table 2.

Recidivism rates for different definitions of recidivism

	Percentage of releasees who within three years were		
Sex	Rearrested	Reconvicted	Reincarcerated
Females	51.9%	38.7%	33%
Males	63.2%	47.3%	41.9%

(U.S Bureau of Justice Statistics, 1989:5)[3]

Although all of the studies cited in Table 1 examined a number of correlates of recidivism, one of which was sex, few made any attempt to control for the effects of these variables when examining differences in the recidivism of male and female offenders. For instance in the study by the NSW Bureau of Crime Statistics (1977), factors that may affect reconviction rates such as an offender's age, the number of prior convictions, the offence for which the offender was charged and the offender's sentence were also examined. Yet despite the finding that first offenders were less likely than non-first offenders to be reconvicted within five years of the previous conviction, that females (except for prostitutes) were less likely to have a previous conviction, the study concludes that "females were much less likely to be reconvicted than males"(p.11). The possibility that some of this sex difference could be attributed to offender characteristics other than sex was not considered.

[3] Because of the under-reporting of court and custody data in Ohio. the percentages of those reconvicted and reincarcerated exclude data from Ohio.

There have been some studies of sex differences in recidivism, which have attempted to control for the influence of other variables For instance Van Der Werff (1981) examined sex difference in a sample of offenders who were convicted of a serious offence in 1966 in the Netherlands while controlling for the category of the offence for which they were convicted and the number of prior offences He found that "... by category of offences and within the group of first offenders, we find this difference in recidivism rates between men and women nearly everywhere" (p.140). Interestingly, although Van Der Werff provides an example of this with regards to common theft, he fails to document the categories for which this trend did not apply.

The study by the U.S Bureau of Justice Statistics (1989) provides more substantial evidence of the possibility that some of the sex differences so far found in recidivism studies may be due to a lack of control of other well-known predictors of recidivism. Table 3 displays the rearrest rates for female and male releasees in the three-year follow-up by the number of prior adult arrest.

Table 3

Percentage of U.S State prisoners released in 1983 who were rearrested within 3 years by number of prior adult arrests.*

Number of prior adult arrests	Female	Male
1	21.4%	39.5%
2-3	32.9%	52.6%
4-6	47.1%	61.1%
7-10	69.2%	67.6%
11 or more	76.5%	79 0%

* U.S Bureau of Justice Statistics (1989:8)

The figures in Table 3 suggest that as an offender's criminal career becomes more extensive gender distinctions in recidivism rates converge, with little difference between the male and female releasees who have seven or more adult prior convictions.

Reoffending Rates

The studies which have been reviewed have all looked at the differences in the reoffending patterns of female and male offenders with respect to only one instance of reoffending. However, as with offending, recidivism can also be considered in terms of frequency, that is, the number of reoffending instances committed by an individual over a given time period. After an extensive literature research it would seem that studies investigating recidivism in this manner have focused solely on male offenders (Blumstein and Cohen, 1979; Le Blanc and Frechette, 1989; Petersilia et al, 1978)[4].

[4] One study was found which looked at offending rates. Unfortunately, it used aggregate data rather than individual data which is the focus of this study. Stattin et al. (1989) followed the criminal activity of a sample of Swedish school children from age 10 years to 30 years. To compute male and female offending rates, they divided the total number of crime occasions for females and males by the total number of females and males in the sample. The rate of offending per person was twice as high for males than as for females in the study (6.9 vs 3).

4. METHODOLOGY

Research samples

The full dataset of 838 offenders for this study was selected from the population of 1,050 prisoners released from Victorian prisons between May 1985 and December 1986. The original population of releasees was identified using discharge listings provided by the then Office of Corrections (now Correctional Services Division of the Department of Justice) and was the product of an unfinished recidivism study initiated by the Department of Justice.[1] In creating the unfinished recidivism database, the original researchers eliminated cases for which any of the following conditions applied: the prisoner was from interstate or had moved interstate after his/her release; the prisoner had died before August 1989; the criminal history record of a prisoner could not be found or was at a country location. Persons released after having served a custodial sentence for fine default were also excluded from the study. The unfinished recidivism data-base comprised a total of 851 cases as March 1990. Record checks undertaken in 1993 for this study eliminated a further 13 offenders whose criminal records could not be traced through the Police Information Bureau, giving a final sample of 838. Thus, the loss rate between initial population and final research sample was 20%.

Table 4 shows the demographic characteristics of the full dataset. It shows that the releaseees were typical of Victorian custodial populations, in that they were predominantly male, Australian-born, poorly educated and unemployed. The offences for which they had been convicted in the episode of imprisonment prior to their release (ie. their Base Offence) are show in Table 5. Again, the distribution of offences is typical of Victorian custodial populations, with around half convicted of property offences, together with significant sub-populations of assaultive offenders (14%), robbers (10%) and driving offenders (8%).

Offence comparison sub-sample

In order to compare offence-related differences in recidivism rates, a sub-sample of 630 offenders was drawn from the total sample. This sub-sample comprised those offenders with a

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[1] The original grant-holders were Dianne Jeans and Monika Henderson

Table 4

Demographic Characteristics Of Full Sample

		No	%
SEX	Male	787	93.9
	Female	51	6 1
ETHNICITY	Aboriginal/T.S.I.	23	2.7
	Not Aborigınal/T.S.I.	801	95.6
	Unknown	14	1.7
NATIONALITY	Australian	718	85.7
	New Zealand	10	1.2
	U.K./Eıre	39	4.7
	Greek	7	0.8
	Yugoslav	12	1.4
	Italian	9	1.1
	Oth European	11	1.3
	Turkish	10	1.2
	Oth. Middle East	7	0.8
	American	4	0.5
	S.E. Asia	3	0.4
	Unknown	8	0.9
EDUCATION LEVEL	Tertiary	26	3.1
	Trade/Technical	3	0.4
	Completed Secondary	25	3
	Part Secondary	586	69.9
	Primary Only	120	14.3
	None	11	1.3
	Unknown	64	7.6
EMPLOYMENT ST.	Employee	284	33.9
	Employer	2	0.2
	Self Employed	42	5
	Pensioner	13	1.6
	Student	3	0.4
	Home Duties	13	1.6
	Unemployed	402	48
	Unknown	79	9.4

Table 5

Base Offence Characteristics Of Full Sample

BASE OFFENCE TYPE	No.	%
Murder	8	1
Manslaughter	21	2 5
Attempted Murder	8	1
Assault	72	8 6
Sexual Assault	41	4.9
Assault Police	6	0.7
Other Off. Against Person	17	0.6
Robbery	85	10.1
Burglary	227	26 6
Theft	43	5.1
Motor Vehicle Theft	86	10.3
Fraud / Misappropriation	40	4 8
Handling Stolen Goods	13	1.6
Shopstealing	7	0 8
Extortion / Blackmail	1	0.1
Arson	4	0.5
Other Property Damage	7	0.8
Breach of Community Order	3	0.4
Breach of Parole	6	0.7
Escape Custody	3	0.4
Resist / Hinder Police	2	0.2
Possess / Use Drugs	40	4.8
Import / Export / Drugs	3	0.4
Traffick / Manufacture Drugs	18	2.1
Unlawful Possession Weapon	24	2 9
Drink Driving	19	2.3
Unlicenced Driving	35	4.2
Other Traffic	10	1.2
TOTAL	838	100

Base Offence (that is, the most serious offence[2] for which they were incarcerated and consequently released between May 1985 and December 1986) in one of four categories: Homicide, Assault, Robbery and Property offences. While these offenders are referred to in this study as Homicide, Assault, Robbery and Property offenders, it should be borne in mind that this is not a description of the prisoner's entire offending career, but rather a description of one instance of offending within that career.

Gender comparison sample

Analysis of gender differences in recidivism rates was conducted on a sub-sample of property offenders. Prisoners were defined as property offenders on the basis of their Base Offence. Disproportionate random sampling was used to select a sample of 74 property offenders (37 female and 37 male) from the 430 property offenders (37 female and 383 male) contained in the total recidivism database. The sampling was disproportionate as 100 percent of the female sample was used in the current sample, compared to approximately 10 percent of the male sample. The random sampling procedure available in the Statistical Package for the Social Science (SPSS) was used to select the 37 male offenders in the current sample from the sample of 383 male property offenders.

The gender comparison sample consisted of non-aboriginal releasees, predominately of Australian nationality (89%), with most (78%) only having partly completed secondary school. Skilled labourers comprised the largest occupational category for male releasees, with insufficient data to categorise female releasees. Just over half of the sample were unemployed at the time of arrest for the principle offence. Overall there was little difference in the socio-demographic characteristics of male and female releasees; the female sample tended to be slightly younger than their male counterparts, with the median age on release 25 years and 26 years respectively.

The principal offence types were similar for both male and female releasees (see Table 6). One exception to this was the category of theft, with male releasees responsible for all motor

[2] The most serious offence was defined as the offence which incurred the longest period of imprisonment at the time of sentencing. If two offences incurred equal imprisonment time at sentencing, the most serious offence was determined on the basis of the maximum statutory penalty applicable. This resolved all cases.

vehicle theft, traditionally a 'male' crime, while females dominated the other theft category. The distribution of the principal offence within the current male sample is comparable to the distribution of the principal offence within the sample of 383 male property offenders from which it was drawn

Table 6

Principal offence types for property offenders

PRINCIPAL OFFENCE	FEMALE (Gender comp. sample)	MALE (Gender comp. sample)	383 MALE SAMPLE *
BURGLARY/ GOING EQUIPPED TO STEAL	22	22	206
FRAUD/ OBTAINING PROPERTY BY DECEPTION @	7	7	33
UNLAWFUL POSSESSION	1	1	-
OTHER THEFT	7	1	43
HANDLING AND RECEIVING STOLEN GOODS	-	1	12
THEFT OF A MOTOR VEHICLE	-	5	89
TOTAL	37	37	383

@ Included in this category is theft by deception or any other fraudulent offence.

Research design

A longitudinal research design was used in the study involving repeated measures of the same subjects. This research design was chosen in preference to a cross-sectional design as it provides detailed information concerning the developmental process of an individual's criminal career, and allows for the investigation of how various factors affect this developmental process. In reference to this research, the longitudinal design allows for the examination of sex differences beyond one instance of recidivism to include the frequency of reoffending in an offender's criminal career. The appropriateness of this design for research regarding criminal

careers was confirmed by the National Academy of Sciences in the publication *Criminal Careers and Career Criminals* (cited in Kemp, 1988:527).

Follow-up time

The American Advisory Commission on Criminal Justice recommends a follow-up period of three years for studies investigating recidivism, as empirical studies have indicated that most of the recidivism occurs within the first three years of a prisoner's release from prison (Maltz 1984:22). Taking into account that any estimate of recidivism will increase as a function of the follow-up period, an interest in the frequency of reoffending, and time restraints placed on the researcher, only the reoffending activity prior to January 1 1992 was examined. The maximum follow-up time for any releasee within the sample was seven and a half years while the minimum was less than one month (due to death).

Data sources

This study relies on officially recorded data to study criminal behaviour. It is well known that official records do not provide a true representation of criminal behaviour. This occurs for several reasons: not all crime is reported to police; all reported crime is not solved, and finally human error contributes to incomplete or erroneous police records. It should therefore be noted that reoffending in this study refers to only those crimes which have been detected and recorded by the police rather than all criminal infractions committed by an offender.

Each prisoner's prior offending history and post-release offending was obtained from the Criminal Records Section of the Victoria Police. The records used were the Docket Minute Sheets listing apprehension details and Criminal History Sheets listing charges and court outcomes. This data was supplemented by data from the Office of Corrections (OOC) which maintains computer-based history files of all prisoners. OOC data was checked against Police records to ensure that all charges and terms of imprisonment that did not appear on police

records were also encoded.[3] OOC data was also used to calculate the amount of time subjects spent in custody, (either on remand or on sentence) during the follow-up period.[4]

Offences And Episodes Of Offending

A distinction can be made between specific offences and an episode of offending. A specific offences refers to one law-violating action, while an episode of offending refers to offences committed at one point in time or as part of one criminal transaction (Stattin et al. 1989:371). To illustrate this point consider an offender who enters a house and steals some goods. The offender is then caught after a high-speed car chase which results in a pedestrian being injured. In this case the offender could be charged with burglary, theft, and reckless and dangerous driving. All these offences essentially relate to one episode of offending as they occurred at one point in time. Thus one episode of offending, can include a number of offences. Similarly an offender who commits two burglaries in one night is considered to have committed only one episode of offending, but two offences. This study focuses on episodes of offending.

Episodes of offending in this study were operationalised as charging episodes (a set of charges). That is, each set of charges in an offender's criminal record (the Docket Minute Sheet) was taken to be one episode of offending. Unfortunately, police do not necessarily charge individuals in terms of single episodes of offending. Often a number of offending episodes are amalgamated into one set of charges. That is, there is not necessarily a one-to-one correspondence between a charging episode by police and an episode of offending by offenders. For instance, a spate of burglaries in one area occurring over a period of time may be linked to one offender. Police may charge the offender with the total number of burglaries in one set of charges. Alternatively, it is also possible that an offender commits two

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3 If a discrepancy arose concerning the same term of imprisonment, for instance, differences in the number of offences, police records were used in preference to OOC data.

4 Time spent in police custody was not included in the study for it typically involved only one to three days, nor was it consistently documented in OOC files. Also omitted from the study were any periods of custody less than 20 days and time spent in custody for fine defaults (typically a couple of days). With reference to computing arrest-rate estimates Blumstein and Cohen (1979:566) discuss the issue of time at risk to commit a crime stating that " The importance of obtaining accurate estimates of time served strongly depends on the magnitude of the time-served correction to time at risk". Due to the extensive follow-up period of this study, a minimum of six years for any releasee (that did not die), it is unlikely that such omissions will undermine the conclusions of this study.

burglaries in one night and because these offences take place in different police regions, incurs two sets of charges, although they correspond to only one episode of offending. After consultation with members of the Victoria Police Force, it appears that the former of these two situations is more prevalent, consequently some underestimation occurs using this operational definition of episodes of offending. As only charges which resulted in a conviction were included in the study, and an episode of offending was included only if at least one of the charges within that episode resulted in a conviction.[5]

Limitations Of The Data

In a very small number of cases, OOC prisoner files contained offences and periods of imprisonment which had not been documented in police files. More common were discrepancies between charging episodes on the Docket Minute Sheet contained in an offenders police files, and the Criminal History Sheet corresponding to the court outcome of these charges. In a number of cases there was no corresponding court appearance for charges noted on the Minute Sheet, while in others court appearances were noted but had no corresponding set of charges. Charging episodes with no corresponding court outcome were not included in the study. Where the reverse occurred, the court appearance was included as an episode of offending.

Although there is also the potential for police "harassment" of offenders in the form of false arrests or inflated charges, it has been suggested that this occurs in few cases (Petersilia, 1980). Furthermore the requirement of conviction for any offence to be included in the present study substantially decreases the possibility of over-estimation of offenders criminal activity.

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5 Only driving offences which resulted in a custodial sanction were included in the study. Furthermore offending episodes which occurred interstate were also included in the study if they appeared on prisoners' criminal records. Offences which resulted in a protection application were not included in the study nor was the offence 'fail to appear'.

Encoding

Data relating to two aspects of an offender's post-release criminal behaviour was recorded. Firstly, information concerning the first nine episodes of offending which occurred after the offender was released from prison were encoded. Specifically the charge date for each of these nine episode, and the disposition corresponding to the most serious offence within each episode included. Secondly, information based on the *entire* follow-up period for each offender was also collected. This included the total number of reoffending episodes, the total number of offences and the most common offence for which an offender was convicted throughout the observation period. Extensive cross-referencing of data was undertaken to limit coding inaccuracies.

Dependent Variables : Indices Of Recidivism

Four indices of recidivism were used: reconviction, reimprisonment, time to fail (reconviction, reimprisonment) and rate of reoffending. The first three measures can be termed as 'simple' recidivism measures as they relate to participation; that is, whether or not an offender reoffends. On the other hand, the rate of reoffending is a more complex measure of total reoffending.

Reconviction and Reimprisonment

The criminal justice system defines recidivism as the commission of an offence after some action by the criminal justice system (Maltz, 1984). A different rate of recidivism will be returned depending on the point within the criminal justice process the definition is set. The variation in recidivism studies can in part be attributed to differences in the definition of recidivism. Two definitions of recidivism were used in the present study: reconviction and reimprisonment. Recidivism was measured with respects to both definitions. The definition of reconviction was used in preference to rearrest due to the assumption of our legal system that a person is innocent until proven guilty in a court of law.

Technical violations of parole or any correctional order were not viewed as instances of reoffending as such behaviour does not violate the laws which pertain to ordinary citizens. Consequently breaches of orders were treated as episodes only if a new set of offences were involved and recorded on criminal records.

Time to Fail

Recidivism can also be viewed in terms of degrees. Conceivably an offender who reoffends within one week of release is less successful than an offender who reoffends after a two year period. Unfortunately, research is limited by the availability of data, and as a result, time to failure was computed using the date on which the prisoner was charged for a particular offending episode rather than the date the offence/s was committed. Consequently there is some underestimation in this measure. A study by the NSW Bureau of Crime Statistics (1977) investigated the time delay between the commission of an offence and arrest for the same offence. The sample in this study consisted of 200 males convicted of 'break enter and steal' (burglary) in NSW in 1972. It was found that 28% of the sample was arrested within one day of committing the offence, 58% within one week, 77 % within one month, and 87% within 2 months of the committing the offence. The longest period between the commission of the offence and arrest for the sample was two years. Although this study gives some indication of the degree of underestimation contained in this measure, it is acknowledged that the time interval between the commission of an offence and arrest will vary across different types of property offence, as well as different jurisdictions.

Time to first reconviction and first reimprisonment were calculated for each releasee. Time to first reconviction was computed by calculating the number of days between an the date an offender was released from prison and the charge date for the first reoffending episode, irrespective of the disposition of the episode. Time to first reimprisonment was calculated in a similar manner, however the charge date of the first episode of reoffending which resulted in a disposition of imprisonment was used in the calculations.[6] Time spent in custody during this period was deducted from the total time to fail. Time to fail is reported in months.

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[6] For those releasees who were reimprisoned, the first reimprisonment occurred within the first nine post-release episodes.

Reoffending Rate

To examine differences in the frequency of reoffending among female and male recidivists, reoffending rates were computed on the basis of the number of episodes of reoffending which occurred within the observation period. As only the time available to commit a crime is of interest, time spent in custody was deducted from the measure. Consequently the reoffending rate for each individual was calculated as:

$$\frac{\text{(Total follow up time or time till death - time spent in custody)}}{\text{Total number of reoffending episodes during the follow-up period}}$$

This provides a measure of the average time interval (in months) between episodes of offending.

Data concerning the most frequently committed offence type and the total number of offences committed by releasees was also included in the analysis in order to gain a better understanding of patterns of recidivism for male and female releasees over a substantial length of time.

5. RESULTS

Recidivism in the full sample

Re-conviction measures

In the seven years after their release, a total of 620 of the 838 prisoners in the full sample (74%) were reconvicted of at least one offence. Figure 1 plots the cumulative pattern of re-conviction over time, and shows the steep initial rise and subsequent flattening out typical of recidivism curves. Just over one-quarter of all releasees had been re-convicted of a further offence within three months of release, one third were re-convicted within five months of release, and by the end of the first year, the proportion re-convicted reached one-half. However, the rate of reconviction slowed substantially after the first year, so that at the end of the second year an additional 10% of releasees were re-convicted, in the third year an additional 5%, and in the fourth year an additional 4%. In the last 12 months (that is, during the seventh year after release) only an additional 1.2% of the original releasees were convicted of a further offence.

Re-imprisonment measures

Of the original 838, a total of 454 (54.2%) were re-imprisoned at least once over the seven year follow-up period. This represents 73.2% of those re-convicted. Figure 2 plots the cumulate re-imprisonment curve over the seven years. In the first four months, one-fifth of releasees had returned to prison, and after six months this had risen to one-quarter. At the end of the first year, just over one third had been re-imprisoned. In the second year, an additional 9% were re-imprisoned, and a further 4% in the third year. The end of the fourth year saw the re-conviction rate reach 50%, and in the last year an additional 1.1% of the original releasees were re-imprisoned.

Thus, while the total re-conviction rate over the seven years after release was less than two-thirds of the total re-imprisonment rate, it can be seen that almost all of this difference was attributable to the lower re-imprisonment rate in the first 12 months. In subsequent years,

FIGURE 1
TIME TO FIRST RE-CONVICTION

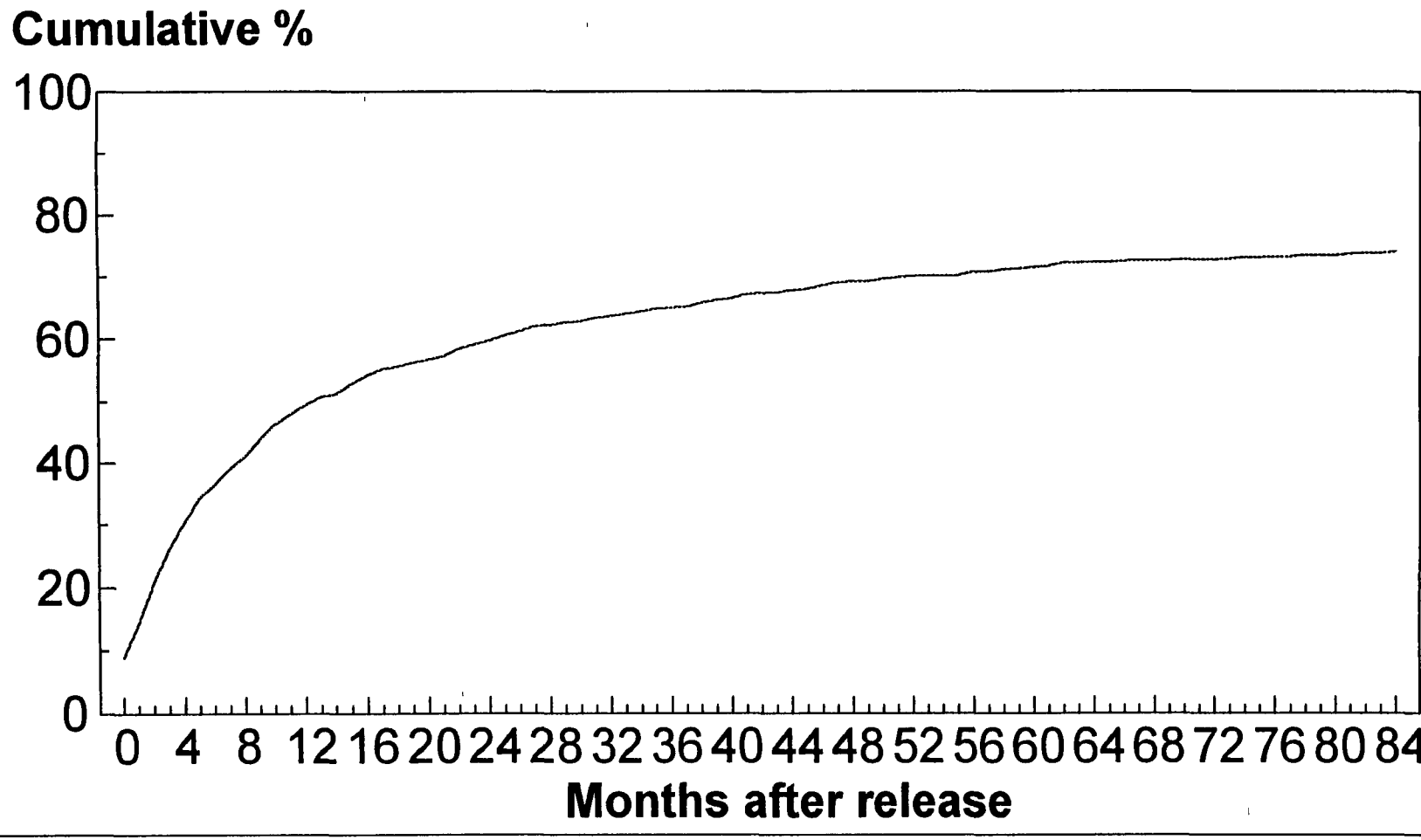
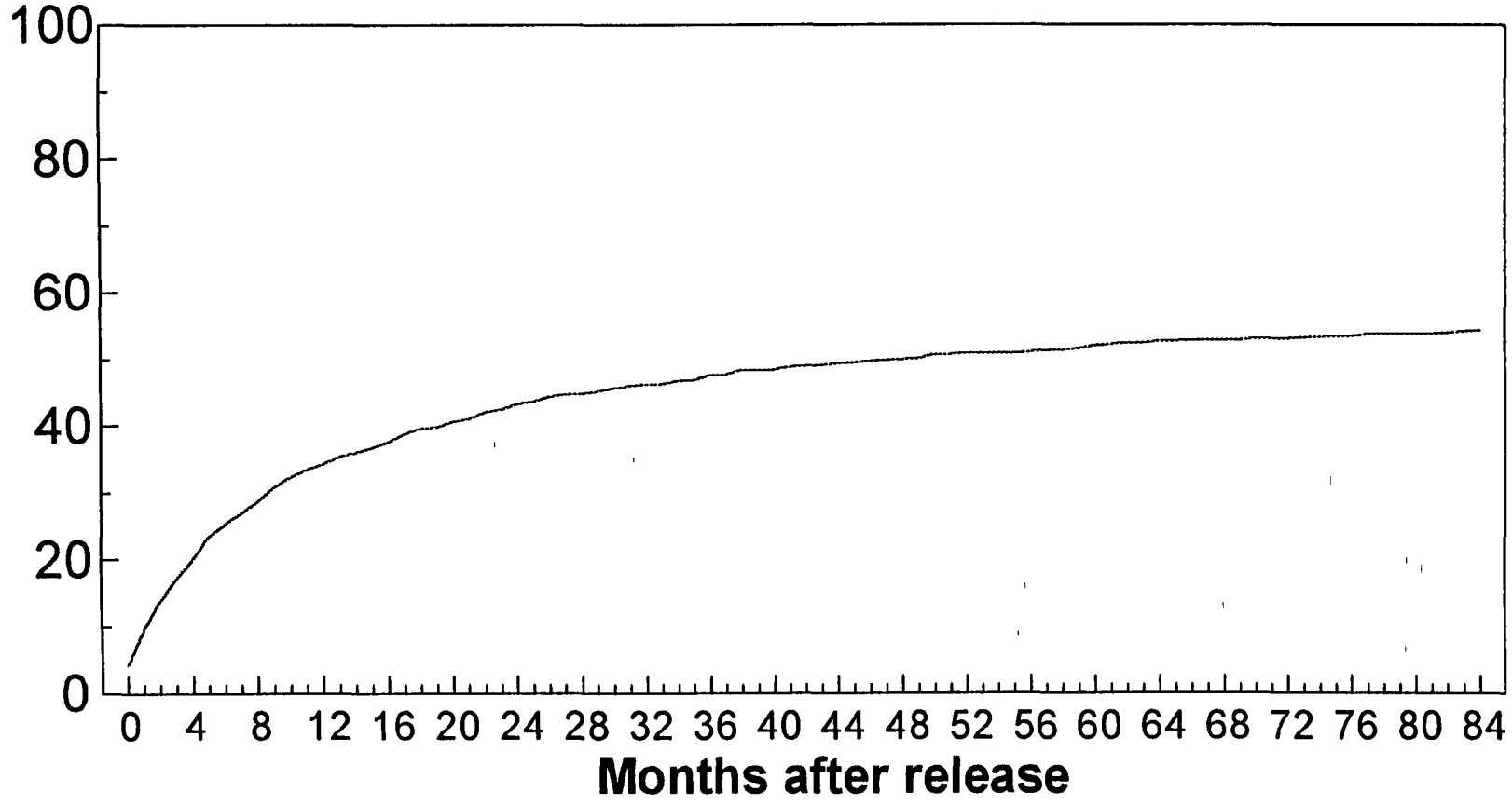


FIGURE 2
TIME TO FIRST RE-IMPRISONMENT



the net increase in the re-imprisonment rate was very similar to the net increase in the re-conviction rate These patterns of re-offending provide only partial support for Maltz' argument that the bulk of recidivism occurs within three years; after 3 years both the re-conviction and re-imprisonment level had reached 88% of their 7-year values While the final 12% of additional recidivism was spread over a further four years, this cannot be ignored as trivial

Correlates of recidivism

Sex of releasee

Tables 7 and 8 show the re-conviction and re-imprisonment rates for male and female releasees. A marginally higher proportion of females than males were re-convicted during the follow-up period (78 4% vs 73.7%) , and a marginally lower rate of re-imprisonment (52.9% vs 54.4%). However, there was no significant difference in overall recidivism rates on either of these measures that was attributable to a simple interaction with sex of the releasee.

Table 7

Re-Conviction By Sex Of Releasee

	Males	Females	All releasees
Reconvicted	580 (73.7%)	40 (78.4%)	620 (74%)
Not reconvicted	207 (26.3%)	11 (21.6%)	218 (26.0%)
Total	787	51	838

Chi-square = 0.56, df = 1, p = 0.455

Table 8

Re-Imprisonment By Sex Of Releasee

	Males	Females	All releasees
Re-imprisoned	428 (54.4%)	27 (52.9%)	455 (54.3%)
Not re-imprisoned	359 (45.6%)	24 (47.1%)	383 (45.7%)
Total	787	51	838

Chi-square = 0.04, df = 1, p = 0.84

Age of first offence

Tables 9 and 10 show the cross-tabulation of re-conviction rates and re-imprisonment rates with the age at which the releasee committed his or her first known offence. For each measure, those offenders who started their offending career youngest were most likely to recidivate. In particular, those offenders whose first offence occurred when they were younger than 15 were substantially more likely to be re-convicted or re-imprisoned, while those whose first offence occurred when they were 18 years or more were much less likely to recidivate. Over 80% of offenders whose first offence was committed when they were less than 15 years old were re-convicted within the seven years, compared with around 50% of those aged over 18 at the time of their first offence. Around 65% of offenders whose first offence was committed when they were less than 15 years old were re-imprisoned within the seven years, compared with 33% of those aged over 18 at the time of their first offence.

Table 9

Re-Conviction By Age At First Offence

Age at first offence

	Under 13 yrs	13 - 14 yrs	15 - 17 yrs	Over 18 yrs
Reconvicted	197 (85.3%)	169 (83.7%)	134 (75.3%)	120 (52.9%)
Not reconvicted	34 (14.7%)	33 (16.3%)	44 (24.7%)	107 (47.1%)
Total	231	202	178	227

Chi-square = 77.9, df = 3, $p < 0.001$

Table 10

Re-Imprisonment By Age At First Offence

Age at first offence

	Under 13 yrs	13 - 14 yrs	15 - 17 yrs	Over 18 yrs
Re-imprisoned	162 (70.1%)	129 (63.9%)	894 (50.0%)	75 (33.0%)
Not re-imprisoned	69 (29.9%)	73 (36.1%)	89 (50.0%)	152 (67.0%)
Total	231	202	178	227

Chi-square = 73.4, df = 3, $p < 0.001$

Number of prior offences

A third correlate of recidivism is the number of prior offences. For this study, the measure used was the number of convictions prior to release from imprisonment at the commencement of the follow-up period (see Tables 11 & 12). There was a strong interaction between the number of prior convictions and both re-conviction and re-imprisonment. Around 90% of offenders with more than twenty prior convictions were re-convicted at least once during the follow-up period, compared with 40% of those with between one and three prior convictions, and 30% of those with no prior convictions. Similarly, around 70% of offenders with more than twenty prior convictions were re-imprisoned at least once during the follow-up period, compared with 30% of those with between one and three prior convictions, and 10% of those with no prior convictions

Table 11

Re-Conviction By Number Of Prior Offences

Number of offences before base prison release

	None	1 - 3	4 - 10	11 - 20	> 20
Reconvicted	16 (29.1%)	29 (39.7%)	171 (70.4%)	244 (84.7%)	160 (89.4%)
Not reconvicted	39 (70.9%)	44 (60.3%)	72 (29.6%)	44 (15.3%)	19 (10.6%)
Total	55	73	243	288	179

Chi-square = 143.1, df = 4, $p < 0.001$

Table 12

Re-Imprisonment By Number Of Prior Offences

Number of offences before base prison release

	None	1 - 3	4 - 10	11 - 20	> 20
Re-imprisoned	5 (9.1%)	20 (27.4%)	112 (46.1%)	192 (66.7%)	126 (70.4%)
Not re-imprisoned	50 (90.9%)	53 (72.6%)	131 (53.9%)	96 (33.3%)	53 (29.6%)
Total	55	73	243	288	179

Chi-square = 109 6, df = 4, $p < 0.001$

2. Differences in recidivism for offence types

Table 13 shows the proportion of releasees who were re-convicted over the seven year follow-up period broken down by the most serious offence in the baseline episode of imprisonment Property offenders showed the highest rate of re-conviction, with over 80% being convicted of at least one further offence. Offenders with a baseline offence of assault also had a re-conviction rate (77.4%) that exceeded the average for the whole sample (74%) Robbery and driving/traffic offenders had re-conviction rates that were equal to or slightly below the sample average, while Homicide and Sexual Assault offenders had re-conviction rates that were markedly below the sample average.

Table 13

Re-Conviction By Base Offence Type

Offence At Release From Prison

	Homicide	Assaults	Sexual Assaults	Robbery	Property	Driving & Traffic	Other
Reconvicted	17 (45.9%)	65 (77.4%)	21 (51.2%)	61 (71.8%)	342 (80.7%)	48 (75.0%)	66 (64.1%)
Not reconvicted	20 (54.1%)	19 (22.6%)	20 (48.8%)	24 (28.2%)	82 (19.3%)	16 (25.0%)	37 (35.9%)
Total	37	84	41	85	424	64	103

The relationship between offence type and re-imprisonment more or less mirrored that for re-conviction (see Table 14). Property offenders were most likely to be re-imprisoned and had a re-imprisonment rate that was substantially higher than the sample average (64% vs 54%), while the re-imprisonment rates for assault and robbery offenders were at or slightly below the sample average. Homicide, Sexual Assault and Driving/Traffic offenders had re-imprisonment rates that were substantially below the sample average.

Table 14

Re-Imprisonment By Base Offence Type

Offence At Release From Prison

	Homicide	Assaults	Sexual Assaults	Robbery	Property	Driving & Traffic	Other
Reconvicted	7 (18.9%)	45 (53.6%)	14 (34 1%)	41 (48.2%)	272 (64.2%)	30 (46.9%)	46 (44.7%)
Not reconvicted	30 (81.1%)	39 (46.4%)	27 (65.9%)	44 (51.8%)	152 (35.8%)	34 (53.1%)	57 (55.3%)
Total	37	84	41	85	424	64	103

There were statistically significant interactions between the baseline offence type and both measures of recidivism, as measured by the Chi-square Likelihood Ratio statistic. However, this statistic measures the overall interaction and does not allow the identification of the elements (cells in the cross-tabulation) contribute to the interaction. A hierarchical log-linear analysis was conducted in order to test which offence types were associated with recidivism rates that differed significantly from the sample average. Note that the residual "Other" offence group has been excluded from this analysis. Tables 15 and 16 show the parameter estimates associated with the re-conviction and re-imprisonment cells in the two cross-tabulations, together with the z-scores associated with these parameter estimates. A z-score in excess of +/-1.96 indicates a cell that is significant at the 0.05 level, and a z-score in excess of +/- 2.76 indicates a cell that is significant at the 0.01 level.

For the re-conviction measure, only the offence groups of Homicide, Sexual Assault and Property offences had parameter estimates that were statistically significant. That is, only these offence groups contributed to the overall significance of the interaction. The sign of the parameter estimate shows how the observed value of the cell diverged from the expected value. The re-conviction rate for homicide was significantly below the expected value (ie. the average for all offenders), as was the re-conviction rate for Sexual Assault offenders. Property offenders had a re-conviction rate that was significantly above the sample average.

Table 15

Parameter Estimates & Z-Scores For Interaction

Between Re-Conviction And Offence Type

Offence Type	Homicide	Assaults	Sexual Assaults	Robbery	Property	Driving & Traffic
Parameter Estimates & Z-scores (Re-conviction)	- 0.46 - 3.18 **	0.23 1 93	- 0.35 - 2.5 *	0 08 0 74	0.33 4.54 **	- 0.17 ? (ns)

L.R. Chi-square = 37.32, df=5, $p < 0.001$

For the re-imprisonment measure, only Homicide and Property offenders had re-imprisonment rates that differed from the sample average. Homicide offenders were significantly less likely to be re-imprisoned, whereas Property offenders were significantly more likely to be re-imprisoned.

Table 16

Parameter Estimates & Z-Scores For Interaction

Between Re-Imprisonment And Offence Type

Offence Type	Homicide	Assaults	Sexual Assaults	Robbery	Property	Driving & Traffic
Parameter Estimates & Z-scores (Re-imprisonment)	- 0.58 - 3.28 **	0.20 1 88	- 0.19 - 1.35	0.09 0 87	0.42 6.04 **	- 0.06 ? (ns)

L.R. Chi-square = 45 41, df=5, $p < 0.001$

4. Gender differences

As noted above, age on release, the number of prior offending episodes, age at first conviction and prior correctional and sentencing history are some of the best correlates of recidivism

known to date. The first stage of the analysis of the interaction between gender and re-offending considers the simple (bivariate) effect of these variables

Age on Release From Prison

The female sample was slightly younger on release from custody than the male sample, with the median age on release for females 25 years, and 26 years for male releasees. This difference was not significant at the 0.05 level of probability using one-way analysis of variance (ANOVA F ratio=.0933, df=1). Table 17 displays the age distribution for female and male offenders on release from prison.

Table 17

Age on release for female and male releasees (gender comparison sample)

Age on release	Females	Males
18 - 21 yrs	5 (13.5%)	5 (13.5%)
22 - 25 yrs	14 (37.8%)	11 (29.7%)
26 - 30 yrs	9 (24.3%)	13 (35.1%)
> 31 yrs	9 (24 3%)	8 (21.6%)
Total	37	37

Age at First Conviction

Consistent with other studies (Stattin et al, 1989), females tended to start their criminal careers slightly later than their male counterparts with the median age at first conviction for females being 16 years, compared to 15 years for male releasees. This difference was not significant at the 0.05 level of probability (ANOVA F ratio=.5571, df=1). The earliest age at which offenders began their criminal careers was 9 years for both male and female releasees (See Table 18).

Table 18

Age at first conviction for female and male releasees (gender comparison sample)

Age at first offence	Females	Males
Less than 13 yrs	4 (10 8%)	6 (16 2%)
13 - 14 yrs	7 (18 9%)	8 (21 6%)
15 - 16 yrs	10 (27.0%)	8 (21.6%)
17 - 18 ys	9 (24.3%)	3 (8.1%)
19 - 20 yrs	3 (8 1%)	2 (5.4%)
21 - 25 yrs	2 (5.4%)	7 (18.9%)
26 - 40 yrs	2 (5 4%)	3 (8.1%)
Total	37	37

Number of Prior Episodes of Offending[1].

Female releasees tended to have a higher number of prior episodes of offending than their male counterparts with the mean number of prior episode being 20 and 13 respectively. Using one-way analysis of variance (F ratio=7.3510, df=1) this difference was statistically significant at the 0.01 level. Interestingly, no female offender had less than three prior episodes of offending. Furthermore five females releasees compared to only two male releasees had over 30 prior episodes of offending (See Table 19).

Table 19

Number of prior episodes of offending for female and male releasees (gender comparison sample)

Prior episodes of offending	Females	Males
1 - 5	2 (5.4%)	10 (27.0%)
6 - 10	5 (13.5%)	5 (13.5%)
11 - 20	18 (48.6%)	16 (43.2%)
21 - 30	7 (18.9%)	4 (10.8%)
> 31	5 (13.5%)	2 (5.4%)
Total	37	37

[1] The number of prior episodes of offending encompasses all episodes of offending prior to the release of offenders from prison between May 1985 and December 1986. Therefore, the episode of offending which resulted in the offender being released during this period is viewed as a prior episode of offending.

Recidivism Measures

Re-conviction

Overall, the number of releasees who were convicted of a further offence was extremely high, with 65 of the 74 releasees (89%) being convicted of at least one offending episode during the follow-up period Although the proportion of female releasees who were re-convicted was slightly higher than male releasees, this difference was not statistically significant (Table 20).

Table 20

Proportion of male and female offenders re-convicted of an offence within seven-and-a-half years of release from prison.

Gender	Re-convicted	Not re-convicted
Female	34 (91.9%)	3 (7.1%)
Male	31 (83.8%)	6 (16.2%)
Total	65 (87.8%)	9 (12.2%)

(Chi-square Likelihood ratio=1.167, df=1, p>0.05).

Re-imprisonment

When recidivism was defined as re-imprisonment, the recidivism rate was lower than when recidivism was defined as re-conviction, with only 47 of the 74 releasees being returned to prison during the observation period. The proportion of females and male releasees who were re-imprisoned during the 7-and-a-half year follow-up period were nearly identical (Table 21).

Table 21

Proportion of male and female offenders re-imprisoned within seven-and-a-half years of release from prison

Gender	Re-imprisoned	Not re-imprisoned
Female	24 (64.9%)	13 (35.1%)
Male	23 (62.2%)	14 (37.8%)
Total	47 (63.5%)	27 (36.5%)

Chi-square Likelihood ratio=.058, df=1, p>0.05)

Time To Fail: Re-conviction

The third measure of recidivism examines the time interval between a prisoner's release from prison and his/her first re-conviction or re-imprisonment

A high proportion of releasees who re-offended did so relatively soon after their release. Within 12 months of release from prison, 83.7% of all female releasees had been re-convicted, with a further 8.1% of all female releasees being re-convicted within the following six-and-a-half years. For all male releasees, only 62.2% had been re-convicted within 12 months of release from prison, while a further 21.6% were re-convicted within the following six-and-a-half years. This difference was significant at the 0.05 level of probability (Chi-square Likelihood ratio=4.8, df=1).

For those releasees who were re-convicted, the median time to fail was 3.2 months (mean=9.3 months). Female releasees tended to be re-convicted of an offence much sooner than their male counterparts with a median time to fail of 3.2 months (mean=7.5 months) for females and 5.6 months (mean=11.3 months) for males. This difference was not significant using one-way analysis of variance (F ratio=1.0718, df=1, p=.304). It should be noted that there was high variability of data around the mean within both the male and female samples, and the distribution was highly skewed, demonstrated by the substantial differences in the mean and median for both groups.

This method of measuring time to fail relies only on data from those releasees who have re-offended within the observation period. It fails to account for those individuals who have

not re-offended within the observation period but still have the potential to do so. These cases are known as 'censored' data. The dominant approach in recent studies (Broadhurst and Maller 1990, 1991) investigating recidivism has been the use of survival analysis which takes account of censored data through the computation of Life Tables. [2] The survival analysis procedure will also be used here, although due to the long follow-up period of this study and the small proportion of censored data, the results of the survival analysis procedure should not differ extensively from the above mentioned results.

Life Tables use data on known cases to calculate the probability of the criterion event (in this case re-conviction) occurring within each time interval within the observation period. The probabilities estimated for each of these individual time intervals is then used to estimate the overall probability of the criterion event occurring at various points in time. The time interval between the starting point of the observation period (release from prison) and the occurrence of the criterion event is known as the survival time. By comparing the estimated survival time for the two groups within the sample, including those releasees who did not fail, it is possible to test the null-hypothesis that the survival distributions are the same for both groups.

Using Survival analysis, the probability of a releasee being convicted of a further offence at any particular time interval was calculated. The median survival time for male and female property offenders were similar to those cited earlier, with the median time to fail 5.6 months for male releasees and 3.2 months for female releasees. Using the Lee-Desu statistic (value=.001, df=1) provided in the survival procedure the difference in survival time for males and female releasees was not significant at the 0.05 level.[3] [4]

Time to fail : Re-imprisonment

A substantial proportion of the releasees were re-imprisoned soon after their release. There was little difference between male and female releasees, with 45.9% of females and 43.2% of

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2 While Broadhurst and Maller (1990,1991) both took into account censored data, only Broadhurst and Maller (1990) computed Life Tables.

3 As described in the by Norusis (1990:B-224) "the statistic available in the survival procedure is calculated according to the alogorithim of Lee and Desu (1972)... The average score is calculated by comparing each case to all others and incrementing the score for a case by 1 if the case has a longer survival time than another case and decrementing the score by 1 if the case has a shorter survival time".

4 The average score computed by the Lee-Desu statistic for releasee: females -6.73; males 6.73.

male all releasees being re-imprisoned within 12 months of release from prison. For those releasees who were re-imprisoned during the follow-up period, the median time to fail was 5.7 months (mean=9.9 months). There was little difference with respect to gender in the time to first re-imprisonment: 7.3 months for male releasees (mean=10.2 months) and 4.9 months for female releasees (mean=9.5). This difference was not statistically significant(ANOVA F ratio=.0558, df=1, p>0.05) .

Again, to control for censored data Survival analysis was used to calculate the probability of being returned to prison for the sample of releasees. The procedure yielded no change to the median time to fail for either male releasees or female releasees. Furthermore that the Lee-Desu statistics (value= 2.674, df=1, p=.10)[5] revealed that the observed difference between the two groups could not be generalised to the population.

Re-offending rate

The fourth measure of recidivism used in this study is the rate of re-offending, measured by the average time (in months) between episodes of offending. The median time interval between re-offending episodes for all recidivists in the sample was 6.3 months (mean=15.8 months). Female property offenders tended to re-offend more frequently than male property offenders with 44.1 per cent of female releasees committing one episode of offending every three months compared to only 16.1 percent of male releasees. At the other end of the scale, only 5.9 percent of females committed one offending episode every two or more years compared to 29.1 percent of male property offenders. Overall the median re-offending rate for female releasees was one offending episode committed every 4.2 months (mean=9.8 months) while for male releasees the median offending rate was 11.8 (mean=22.5). Using one-way analysis of variance (F ratio=5.5316, df=1) these differences were statistically significant at the p<0.05 level.

Re-offending rate: Number of Offences

The median number of offences for which female property offenders were convicted of during the entire observation period was 23 offences (mean=73.8), compared to a median of 12 offences for their male counterparts (mean=28.6). The difference in means between male and

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5 The average score computed by the Lee-Desu for releasees: females -.08101E-01; males .08101E-01.

female offenders was not significant using one-way analysis of variance (F ratio=2.4298, df=1). Again, this was probably due to the large standard deviations(std) of the means (male std=44, female std=170), associated with the positively skewed distribution. In particular, one female offender was convicted of over 1000 offences during the observation period (See Table 22).

Table 22

Number of offences committed by female and male recidivists during the seven-and-a-half year follow-up period.

Number of offences	Females	Males
1 - 10	7	10
11- 20	8	9
21 - 50	5	5
51 - 100	8	5
> 100	6	2
Total	34	31

Multivariate analysis of gender & control variables

This section assesses the significance of gender relative to the control variables in explaining the observed differences between males and females prison releasees in relation to the recidivism measure of re-conviction within the first 12 months after release.

Re-Conviction Within 12 Months

Logistic regression was used to examine relationship between gender and re-conviction. As noted earlier, although there was no difference in the overall distribution of time to first conviction, there was a significant difference ($p<0.05$), between the proportion of females and males within the sample who were re-convicted within 12 months of release. Consequently the dependent variable in this measure is re-conviction within 12 months of release from prison.

Essentially logistic regression provides a measure of the effect a variable has on the odds (likelihood) of being re-convicted within 12 months. For the variable of gender the odds ratio can be computed as the odds that a female offender will be re-convicted within 12 months of release from prison divided by the odds that a male offender will be re-convicted within 12 months of release from prison.

Firstly the zero-order relationship between the dependent variable and the independent variables (gender and the control variables) were examined. That is, each independent variable was inserted alone into the logistic regression model to ascertain if it had a significant effect on the likelihood of re-conviction within the first 12 months of release (see Table 23).

Table 23

Zero-order relationships between re-conviction within 12 months of release and the independent variables (gender and the control variables).

Independent Variable	Parameter Estimate (B)	Significance Level	Odds Ratio Exp. (B)
Gender	1.15	0 03*	3.14
Age on Release	-0.03	0.37	0.97
Age at First Conviction	-0.2	0.00*	0.82
Log. Number of Prior Episodes	4.01	0 00*	55.6
Prev. Bonds	-1.35	0.01*	0.26
Prev. Caution	-0.78	0.2	0.46
Prev. Probation	-1.48	0.01*	0.23
Prev. Custodial	-1 25	0 02*	0.29
Ward of State	-1.8	0.04*	0.17

1 The effect of each additional prior episode of offending is likely to decline as the overall number of prior episodes increases. Consequently, the natural logarithm of the independent variable was used.

2. Includes either a term of imprisonment or a period of incarceration at a Youth Training Centre.

While this analysis showed that female property offenders were approximately three times more likely to be re-convicted within 12 months of release from prison than male property offenders, it ewas also the case that many of the other independent variable also showed a statistically significant relationship with the likelihood of re-conviction within 12 months. These variables included Age at first conviction, the natural logarithm of the number of prior conviction episodes, sentences arising out of prior convictions (bonds, probation, imprisonment), and having been a State Ward.

Those independent variables whose zero-order relationship were significant at the 0.05 level using the Chi-square statistic were retained for further analysis; the variables Age on release from prison and being previously cautioned were excluded. Due to the small sample size, an insufficient number of cases were available to allow all the variables into the logistic regression equation at one time. In order to assess how much of the observed relationship between gender and the dependent variable was a function of the control variables, each control variable was entered into the logistic regression equation with gender as the only other independent variable.

Table 25

Odds ratios for gender when the respective control variable was entered into the logistic regression equation.

Variables in the regression equation	Odds ratio for gender
Gender only	3.14 **
Gender + Log. prior offending episodes	1.57
Gender + Prev. Bonds	2.95*
Gender + Prev. Probation	2.85
Gender + State Ward	3.09**
Gender + Age at First Offence	3.11*
Gender + Prev. Custodial	2.93*

** Significant at the 0.05 level; * Significant at the 0.06 level.

The effect of gender on re-conviction within 12 months of release from prison was no longer significant at the 0 05 level of probability when most of the control variables were included in the regression equation with gender (see Table 25) More importantly however, was the substantial decline of the odds ratio for gender to 1 57 when the variable of prior episodes was entered in the analysis, indicating that the observed sex difference could not be attributed to gender but was a result of differences between male and female releasees in the number of prior episodes of offending

6. DISCUSSION & CONCLUSIONS

It was proposed at the outset of this paper that measures of recidivism needed to be based on an understanding of offending at the level of the individual as a complex inter-relationship between individual, social and structural factors. The existence of strong statistical relationships between offender attributes and criminal history variables and the probability and extensiveness of re-offending has been a long established feature of criminological research. This research confirms that such relationships exist for a population of released prisoners in Victoria. The principal findings of the research were:

- male and female releasees were equally likely to be re-convicted and re-imprisoned;
- releasees who committed their first offence when aged 14 years or less were much more likely to be re-convicted and re-imprisoned than those whose crminal careers started after they were 18;
- releasees with many prior offences were much more likely to be re-convicted and re-imprisoned than those who had only a few priors;
- offenders convicted of property offences were much more likely to be re-convicted and re-imprisoned than those who had been convicted of homicide.

The first of these findings is surprising in the sense that one of the most consistent findings of criminal career research is that men have higher rates of offending and re-offending than women. The answer to this lies in the substantial covariation that exists between demographic and offence history correlates of recidivism. Multivariate analysis shows that the observed bivariate relationship between sex and recidivism is attributable to differences in the number of prior episodes of offending. That is, the men and women in this sample of released prisoners have comparable recidivism rates because they have comparable prior criminal histories. This in itself is unusual, and is the result of using a highly selected group of offenders.

Released prisoners are a distinctly unrepresentative sample of all offenders. Only about 5% of all persons appearing before a criminal court in Victoria are sentenced to imprisonment, and a substantial proportion of that 5% have previously been in custody. An offender generally has

to commit either repeated or relatively serious offences before a court will consider the use of imprisonment. A sample of prison releasees is, in effect, a group of offenders selected on the basis of either a long criminal record or fairly serious offending, or both. Both the men and women in the research sample have been selected more or less equally on this basis, and it follows that they have relatively similar probabilities of further offending.

Recidivism and performance measurement

The process of performance monitoring of administrative systems is predicated on the notion that the system attributes that are being measured are internally generated or at least subject to influence by the system. For example, it is probably fair to use the proportion of late trains as a measure of the performance of a public transport system, but not to use the proportion of passengers who are late to work. Lateness to work derives from a variety of influences, most of which are not under the control or even indirect influence of public transport administrators.

The statistical relationships that exist between recidivism and offender attributes mean that simple indices of recidivism are problematic measures of comparative correctional system performance. Prisoner populations in Australian jurisdictions are not homogenous: the proportion of female, young, and Aboriginal/Torres Straight Islander prisoners vary significantly between jurisdictions (see Table TT). Each of these attributes is associated with higher or lower imprisonment rates, and one would expect to see different recidivism rates even if the underlying "performance" of all corrections jurisdictions in preventing further offending were identical.

TABLE 24

SELECTED CHARACTERISTICS OF AUSTRALIAN PRISONER POPULATIONS

State	NSW	VIC	QLD	WA	SA	TAS	NT	ACT	AUST
% Property offenders	28.3	27.4	24.3	25.8	30.5	21.1	20.1	53.3	27.2
% Female	4.7	5.1	3.8	6.1	5.8	3.4	1.9	6.7	4.8
% Aged under 20	4.5	3	12.7	9.4	7.2	10.6	8.6	14.2	6
% Aboriginal	9.6	4.6	20.6	31.4	15.9	5.3	75.6	0	15.2

Source : Australian Prisoners 1993

These patterns highlight a critical difference between using recidivism as an index of program performance, versus using it as an index of agency or juridiction preformance. Program evaluations are usually conducted using matched samples or pre and post-intervention testing, with the result that covariates of recidivism have (in theory at least) no overall impact on measured rates. However, Table 24 shows that the populations under the authority of different correctional agencies do differ significantly in relation to at least four factors known to be significantly related to recidivism. Thus, one would expect to see different recidivism rates across jurisdictions even if the underlying "performance" of all corrections agencies in preventing further offending were identical.

One possible way around this problem would be to apply statistical corrections for these population differences: for example, by citing recidivism rates for male, non-aboriginal homicide offenders aged 20 to 25, or female property offenders aged 16 to 18 years. The difficulty with such an approach is that a bivariate statistical relationship may itself indicate only that a more fundamental causal relationship underlies both. The analysis presented here on the influence of sex on reoffending and reconviction rates exemplifies this problem. While sex appears to be a fundamental factor underlying offending patterns, with highly selected offender populations this relationship does not hold.

Smith & Paternoster (1990, in Coumelaros and Weatherburn,1995) pointed out the weakness in research that uses regression techniques to control for factors known to be prior correlates of offending. They noted that the decision to refer an offender to court may be influenced by factors (eg parental criminality) correlated with recidivism but not included in the regression analysis

> "the measured effect of court appearance on reoffending rates may reflect no more than a selection effect. The individuals who went to court were already more likely to reoffend and were sent there for that reason."

This research showed that the factors most directly associated with recidivism were those that characterised the offender's criminal history: age of first offence and number of prior offences. Unfortunately, existing information about offending populations typically does not include detailed, accurate criminal history data. The only available information that bears on this issue is prior imprisonment history, collected in the National Prison Census since the early 1980's (see Table 25). While it is clear from this table that Australian prisoner populations do differ in their prior imprisonment profile, this information is an inadequate base on which to build a complex performance measurement system.

TABLE 25

AUSTRALIAN PRISONERS WITH PRIOR IMPRISONMENT

State	NSW	VIC	QLD	WA	SA	TAS	NT	ACT	AUST
% Prior adult impris	52.1	68	46.6	54.8	78.4	57	72.5	46.7	56.5

Source · Australian Prisoners 1993

More problematically, the criminal history attributes that appear to exert the strongest direct influence on the probability of further offending are effectively unknown across correctional populations. The inter-jurisdictional differences in the proportion of prisoners who have previously been in prison (above) suggest that Australian prisoner populations are not homogenous with respect to their criminal histories. However, at present there is no systematic information base on the criminal histories of Australian offenders. Until this type of information is available, any recidivism-based comparison of jurisdictional performance will be an exercise incorporating a high level of uncertainty.

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APPENDIX 1 : Time to fail frequency tables

TIME TO FIRST RECONVICTION

Months After Release	Number Reconv.	Percent	Cumulative Percent
.00	56	6.7	9.0
1.00	64	7.6	14.3
2.00	54	6.4	20.7
3.00	45	5.4	26.1
4.00	35	4.2	30.3
5.00	34	4.1	34.4
6.00	17	2.0	36.4
7.00	22	2.6	39.0
8.00	17	2.0	41.0
9.00	23	2.7	43.7
10.00	20	2.4	46.2
11.00	13	1.6	47.8
12.00	13	1.6	49.4
13.00	11	1.3	50.7
14.00	4	.5	51.2
15.00	13	1.6	52.8
16.00	11	1.3	54.1
17.00	8	1.0	55.1
18.00	4	.5	55.5
19.00	6	.7	56.2
20.00	4	.5	56.6
21.00	5	.6	57.2
22.00	10	1.2	58.4
23.00	5	.6	59.0
24.00	6	.7	59.7
25.00	7	.8	60.5
26.00	6	.7	61.2
27.00	7	.8	62.0
28.00	2	.2	62.2
29.00	3	.4	62.6
30.00	2	.2	62.8
31.00	5	.6	63.4
32.00	2	.2	63.6
33.00	3	.4	64.0
34.00	3	.4	64.4
35.00	3	.4	64.8
36.00	2	.2	65.0
37.00	1	.1	65.1
38.00	6	.7	65.8
39.00	3	.4	66.2
40.00	2	.2	66.5
41.00	5	.6	67.1
42.00	2	.2	67.3
43.00	1	.1	67.4
44.00	3	.4	67.8
45.00	2	.2	68.0
46.00	5	.6	68.6

TIME TO FIRST RECONVICTION (cont)

Months After Release	Number Reconv.	Percent	Cumulative Percent
47.00	3	.4	69.0
48.00	2	.2	69.2
50.00	3	.4	69.6
51.00	2	.2	69.8
52.00	2	.2	70.0
53.00	1	.1	70.1
56.00	5	.6	70.7
57.00	1	.1	70.8
58.00	2	.2	71.0
59.00	1	.1	71.2
60.00	1	.1	71.4
61.00	2	.2	71.6
62.00	4	.5	72.1
64.00	1	.1	72.2
66.00	2	.2	72.4
67.00	1	.1	72.5
70.00	1	.1	72.7
73.00	1	.1	72.8
74.00	2	.2	73.0
76.00	1	.1	73.2
78.00	2	.2	73.4
81.00	2	.2	73.6
82.00	1	.1	73.8
84.00	2	.2	74.0
.	218	26.0	Missing
Total	838	100.0	100.0

TIME TO FIRST REIMPRISONMENT

Months After Release	Number Reimpr.	Percent	Cumulative Percent
.00	35	4.2	4.2
1.00	45	5.4	9.6
2.00	36	4.3	13.9
3.00	28	3.3	17.2
4.00	23	2.7	19.9
5.00	29	3.5	23.4
6.00	15	1.8	25.2
7.00	15	1.8	27.0
8.00	14	1.7	28.7
9.00	18	2.1	30.8
10.00	13	1.6	32.4
11.00	9	1.1	33.5
12.00	7	.8	34.3
13.00	9	1.1	35.4
14.00	5	.6	36.0
15.00	7	.8	36.8
16.00	7	.8	37.6
17.00	10	1.2	38.8
18.00	7	.8	39.6
19.00	2	.2	39.8
20.00	6	.7	40.6
21.00	3	.4	41.0
22.00	8	1.0	42.0
23.00	4	.5	42.4
24.00	7	.8	43.2
25.00	3	.4	43.6
26.00	3	.4	44.3
27.00	3	.4	44.7
28.00	1	.1	44.8
29.00	3	.4	45.2
30.00	3	.4	45.6
31.00	3	.4	46.0
32.00	2	.2	46.2
33.00	4	.5	46.2
34.00	4	.5	46.7
35.00	1	.1	46.8
36.00	4	.5	47.5
37.00	1	.1	47.6
38.00	6	.7	48.3
39.00	1	.1	48.3
40.00	2	.2	48.4
41.00	3	.4	48.8
42.00	1	.1	48.9
43.00	2	.2	49.1
44.00	2	.2	49.3
45.00	1	.1	49.4
46.00	2	.2	49.6
47.00	2	.2	49.8

Months After Release	Number Reimpr.	Percent	Cumulative Percent
48.00	1	.1	49.9
49.00	1	.1	50.0
50.00	3	.4	50.6
52.00	2	.2	50.8
56.00	2	.2	51.0
57.00	2	.2	51.2
58.00	1	.1	51.3
59.00	2	.2	51.5
60.00	2	.2	51.9
61.00	2	.2	52.1
62.00	2	.2	52.3
64.00	2	.2	52.5
66.00	1	.1	52.6
67.00	1	.1	52.7
70.00	1	.1	52.9
73.00	1	.1	53.1
74.00	1	.1	53.2
75.00	1	.1	53.3
78.00	2	.2	53.6
82.00	2	.2	53.8
83.00	2	.2	54.0
84.00	1	.1	54.2
.	384	45.8	Missing
Total	838	100.0	100.0