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CAREERS OF INSTITUTIONALISED CHRONIC AND SERIOUS OFFENDERS

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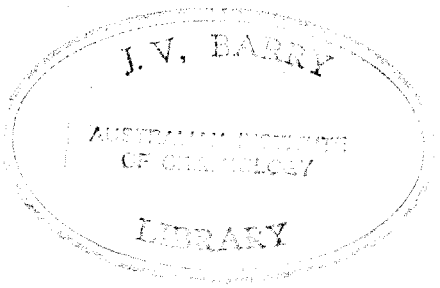

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INTRODUCTION

Interest in the precursors of chronic or serious offending continues to fascinate penologists. No doubt this is because those most imbued with the tradition of positive science still hope to find predictable patterns, sufficiently reliable, to direct effective interventions. Prevention of crime by early identification and correction might be achieved, it is thought, by careful examination of the characteristics of the offenders, an aim not entirely abandoned just because such known offenders may not or probably do not represent the population of possible criminals. Commonsense logic has prevailed to the extent that attempts continue to be made to at least address the potential for prevention even in this specially constructed group. In fact the search for such predictors has been described as the 'holy grail' of traditional criminology discredited by the methodological and historical flaws exposed by its critics (Downes 1987). The search (as well as less ambitious versions) has indeed faltered as interest in the socio-political character of crime and punishment has appropriately flourished and researchers have sought to mine less limiting or unrewarding and unfashionable sources of data such as prison records.

The focus has changed from a primary interest in the offender (usually the prisoner) to an interest in the law enforcement agents themselves and victims. The paradigm of 'radical criminology' helped reshape the agenda and has

incidently been usefully co-opted by 'administrative criminology' (Bottoms 1987, Young 1987). Perhaps this merely reflects the success of the 'social' scientists in asserting their credentials in a sphere until recently dominated by medicine and law . One can sense, however, that in the reconstructed prison created by the social workers, that 'positive custody', 'early intervention', 'meaningful programmes', 're-integration' , 'resocialisation', and other expressions of administrative purpose have similiar intent to the discredited aims of the rehabilitation period.

The vehicle for this revived interest in distinguishing between offenders and non-offenders or high from low risk offenders has been the 'criminal career' paradigm. The focus for recent research has been the Panel on Research on Criminal Careers under the auspices of the United States National Academy of Sciences (cf. the Committee on Research on Law Enforcement and the Administration of Justice: Blumstein, Cohen, Roth and Visher 1986)). 'Criminal career' research in the view of this research panel had a variety of important policy uses including "identifying variables associated with the most serious offenders (in terms of their criminal careers) so that such information may be used by decision makers, within legal and ethical constraints, to anticipate future criminal activity by an offender about whom they must make a processing decision". In addition the panel included the identification of erroneous factors viewed as predicting future criminal activity, "improving identification of high risk offenders" and designing

effective programs for them, and the better assessment of the incapacitive effects of current or proposed imprisonment policies with hopes of leading to better use of scarce resources and better research programmes (Blumstein et al 1986: 29).

Unfortunately the panel did not review recidivism studies because such studies in the panel's view lacked "...sufficient detail on the number and timing of postrelease arrests that would be necessary for estimating annual offending and termination rates" (Blumstein et al 1986: 30) Thus they based estimates of these rates on various arrest samples so they can not be compared with those calculated from prison records. The critical dimensions of 'criminal career' were participation, frequency and seriousness of offending as well of course as the duration of the 'career'. These aspects are partly examined in our analysis of the 'careers' of institutionalised offenders.

Apart from the mundane administrative benefits of improved record keeping, identification, population estimates and 'facts' that 'career' criminal research may produce, it is the continued aim of intervention and improved control which seems to account for persistent analysis of prison records. More cynically, such research may also help find targets for intervention that inevitably will be successful because of very low probabilities of repetition or failure, thus a sex offender programme will appear more attractive (or attract

more resources) than a drunk driver programme . A sex offender programme may be more easily shown successful because the behaviour is rarer and shows lower recidivism or repetition compared to drink driving or theft.

Thus we find continued interest in the subsequent or consequent behaviour of prisoners even in the late 1980's because, despite the advances of victimisation studies and so on, prison records are one of the few stocks of longitudinal data we can readily use. Another reason which appears unrelated to cause or other theoretical concerns is the importance attached to the 'career' or repeat criminal in the public mind. 'Career' criminals attract this attention because the headline "EX CON RAPES" or "PAROLEE ROBS T.A.B." etc., implies both the expectation of effective identification and intervention as well as culpable failure on the part of authorities to 'see' or 'do' something that hindsight has made obvious.

Linking theory with this commonsense/everyday view is the notion of the prison as a 'school of crime'. The prison thus manufactures criminals and emerging from its undergraduate and post-graduate programmes are offenders schooled in the careers of thief, rapist and murderer. Walker (1983), amongst others, has challenged this view on the basis that there is little evidence of either good or bad long term effects arising from imprisonment. The view that the culture of the prison is purely a negative product of its architecture and purpose is challenged by the observation

that many of the behaviours and attitudes are imported from the outside general or sub-culture. Thus prison hardly breeds criminals but the institutional aspects interact along with many other factors imported from the 'outside'. Clemmer (1940), the original author of 'prisonisation', really focused on adaptation to prison but has often wrongly been seen as supporting the 'school of crime' theory. For Clemmer many prisoners did embrace the culture and argot of the prison and even relished their role as criminals but very large numbers (he estimated at least about 40%) did not and remained largely unassociated with other prisoners and a criminal culture.

Thus Clemmer questioned the real effect of prison on many prisoners and doubted if it could be seen just as a university of crime. This view suggests that prison may incubate some prisoners who become serious criminals but there is no simple cause and effect. Nevertheless, this notion remains 'popular' suggesting that those who enter the prison will ultimately progress to more and more serious crime and that it is criminological science's task to map this process through the study of criminal careers. Despite all the research that has preceded, the theory and problem remains to be studied definitively. It is precisely this idea that this report attempts to address by examining the records of institutionalised offenders over a period of twelve years.

Blumstein, Cohen, Roth and Visher (1986) and Blumstein,

Cohen and Farrington (1988) have emphasised the distinction between research that focuses on criminal careers as distinct from research on 'career' criminals in order both to acknowledge the particular problems of using the term 'career' in describing the behaviour of recidivists and the need to describe the pattern of offending untainted by any presumption of career specialisation or progression to worse behaviour. In Blumstein et al's work the interest is in the frequency or 'incidence' of offending (they used arrest records rather than prison records) over time and they drew an important distinction between prevalence (the proportion of offenders in the population or of an age group) of offending and frequency of offending by offenders. In short they have stressed that while the prevalence of offending declines with age (i.e. most offenders are aged 15 - 21) the frequency and severity of offending for older active offenders does not.

In fact, according to their work and others (Rand 1977, West and Farrington 1977, Petersilia 1980, West 1982, Farrington and Tarling 1985, Greenberg 1985) on both the criteria of frequency and severity, older offenders seem to account for very significant proportions of crime - in other words repeat offenders or recidivists contribute to a disproportionate amount of the worst crimes. In policy terms this has led to the view that these recidivists can be anticipated and incarcerated for longer periods than others in order to extend the benefit of such incapacitation to

potential victims. The habitual criminal and habitual criminal sentences thus return to the centre of criminal justice policy as the mechanism to scourge the predators. Prediction and identification of these 'habitual', or 'career' criminals becomes essential. The calculus turns to finding the cost of implementing the policy in terms of additional prison cells and the number of repeat offenders unjustifiably (morally and financially) incarcerated because they do not commit more or worse offences - the false positives.

Blumstein and colleagues have been at pains to point out to critics like Hirschi and Gottfredson (1986, 1988) that criminal career research is not able to justify 'incapacitation' policies because of insufficiently accurate prediction as well as important moral and strategic arguments. What is stressed is a different perception of the crime problem as not just primarily a juvenile and youth phenomena but one that has an important adult dimension especially with regard to the more serious crimes. Thus the problem of recidivism and the issue of progression to more serious/frequent offending and the mechanism for interfering with these developments deserve the highest priorities in policy formulation. Our contribution begins with an effort to describe the frequency and severity of offences for which recidivist prisoners in Western Australia are incarcerated.

THE DATA

The data set analysed in this report has been discussed in detail in Broadhurst et al (1988) and in Broadhurst and

Maller (forthcoming). Briefly it consists of the entire population of 16,433 prisoners released for the first time between 1975 and 1987 from Western Australian prisons. Furthermore the total prison records up to the cutoff date are available for these prisoners, giving us the opportunity to study longitudinal or 'criminal career' aspects of the offending behaviour of known criminals. The data is limited to the extent that it records all custodial events but excludes convictions resulting in a non-custodial intervention.

CLASSIFICATION OF THE SERIOUSNESS OF OFFENCES

An important and sometimes overlooked difficulty of studying the 'criminal careers' of prisoners is the classification of offences in some order of severity. This is basic if we are to tell if a prisoner has come back for a more or less serious offence, or if a prisoner's subsequent behaviour is repetitive or eventually becomes worse. It is obviously important also if we are to qualify the general outcome of recidivism which has been criticised as a measure because it fails to take account of qualititative differences such as less or more serious offending.

The prison record does not order offences; instead they are grouped according to a typology based on legal/statutory classes irrespective of seriousness, as per the 60 offence groups prescribed in the Draft Australian National Classification of Offences (1980). Thus our rank order must

be created from the approximate 1,100 offence groups specified in Western Australian prisoner records. A further complication is that the major or principle offence in the prison record is defined according to the offence for which the longest sentence was received, in those cases where more than one offence led to a concurrent or cumulative sentence.

The problems of defining a workable severity order of offences are legion; for example how do we classify attempted crime or control for differences in harm done for the same class of offences ? Or how do we handle differences in sentences that are the result of the repetition of offences? For example do we treat the third offence of theft the same as the first? If we use the length of sentences prescribed by the court as a guide we must assume judicial consistency and may find our commonsense rank orders of severity distorted because of personal factors like age, gender or previous convictions. In our records we rely on Criminal code, Police Act, Road Traffic Act or other statutory offence descriptions and the length of sentence available, so most of the specific details that might help us, like the degree of harm done or value of stolen goods etc. are absent. Of course these are problems that have plagued codifers and sentencers for centuries and we can hardly expect to resolve here the problems in values that are exposed. The issue does however bring into sharp relief the difficulties of perfectability even within the apparently unproblematic sphere of measurement.

It is essential for our purposes, however that we have an unambiguous working categorisation of offence severity.

In this report we propose an order of severity of offence based on the combination of a arbitary rank order derived from public opinion research (eg. Broadhurst and Indermaur 1982)) qualified by distinguishing some broad offence categories (i.e. theft and assault) by reference to the length of prison sentence served. This approach produces a rank order scale which differs in some respects from the useful relative rank orders developed from the work of Sellin and Wolfgang (1964) and recently used in Australian context by Wilson et al (1986). The construction of operational severity scales has become increasingly relevant as criminologists undertake attempts to measure sentencing practice. Nevertheless, as a number of scholars have shown, even the technical problems remain very considerable especially if some 'community' standard is included (see for example Cullen et al, 1985, Walker and Marsh 1984, Sebba 1980 and Sheley 1980). In adopting our approach we are not arguing for a perfect but for a workable method and would welcome alternative severity scales. It would be a relatively easy matter to factor any combination of seriousness into our calculations and parameters. One of the tasks of this research is to examine the sensitivity of our conclusions to changes in the categorisation of offence severity.

A number of versions of a working severity scale have been explored for our purposes - none of which have proved

beyond criticism. The difficulties in devising such a scale appear more difficult the more specific (accurate?) it is required to be. These problems are reduced if the scale is limited to broader (cruder) 10 or 5 point scales. Nevertheless, as the Australian Law Reform Commission work on sentencing has shown, this really trades off one set of problems for another - offences on the margins of one level or another become more difficult to decide and precision is sacrificed. We have used for all our subsequent calculations a 20 point scale detailed in Table A below. This in turn is a contraction of a more detailed 42 point scale which will be described elsewhere. Because of unresolved difficulties with locating breach orders (i.e. breaches of probation, parole etc.) within the scale these have been treated as having "zero" seriousness, but are still reported in the two way tables below.

Given the inherent difficulties in ranking offences it is reassuring that when comparisons were made (in terms of outcomes) between the 20, 10 and 5 point scales devised below (see Table A) and a further ranking scheme in which seriousness was based solely on the length of sentences, differences were minor and followed a consistent pattern. That is, as the categories were broadened there was a tendency for fewer subsequent offences to become defined as more serious, whereas the scale based on length of sentence tended to increase the tendency for more subsequent offences to be defined more serious. That these comparisons between

the various scales produce so few differences suggests the need for further study. The apparent interchangeability of the scales raises interesting issues about the relationship between length of sentence and severity of offending and reinforces the view that progression to more serious offences is not in part the artefact of the scales employed.

TABLE A

OFFENCE SEVERITY SCALE - (20, 10, 5 POINT VERSIONS)

OFFENCE DESCRIPTION	SCALE VALUE 20	10	5
Minor traffic, vehicle licence, other miscellaneous offences	1	1	1
Serious traffic	2	1	1
Obscene language, supply alcohol, use/possess cannabis	3	1	1
Driver license (disqualification etc.), refuse alcohol test, excess BAC	4	2	1
Drunkeness, disorderly conduct, wilful exposure	5	2	2
Drunk driving	6	3	2
Use narcotics	7	3	2
Unlawfully on premises, forceable entry, other good order offences	8	3	2
Motor vehicle theft, property offences theft, fraud, wilful damage) sentence < 6 mths	9	4	2
Sell cannabis	10	5	3
Hinder, resist police, other offences against justice except court breaches	11	5	3
Property offences sentence > 6 mths	12	6	3
Assault & other against person sentence < 6 mths	13	6	3
Driving cause death	14	7	4
Assault etc. sentence > 6 mths	15	8	4
Robbery, GBH, sex offences other than rape or incest	16	8	4
Sell narcotics	17	9	5
Rape & incest	18	9	5
Manslaughter, attempt murder	19	9	5
Murder, wilful murder	20	10	5

For the sake of the present research the scales listed above will suffice to demonstrate the possibilities of improved qualitative description of outcomes.

STATISTICAL METHODS

We can consider two distinct methods of attempting to measure the propensity of recidivists to commit more or less serious crimes:

(1) we can attempt to measure the tendency, with each successive return to prison of an individual, to commit a more or less serious crime; and

(2) we can consider an individual's entire record and measure the probability that he/she has ever (or will ever) commit a more or less serious crime than that committed on a designated offence, for example, the first, second , etc. offence for which they were incarcerated.

Of these, the second is more closely related to the idea of analysing a 'career' in crime or a criminal career, but the first method is also important since it measures the general trend towards more or less serious offences with successive recidivist events. We have called this approach, 'one -step' analysis.

Both methods suggested produce criminological and statistical problems which have received little previous attention. We have already briefly discussed the problem of

creating a workable and meaningful seriousness scale which can be employed to measure qualitative changes in the severity of reincarceration as this occurs. From a statistical point of view another major problem is the 'censored' nature of the data. Prisoners released prior to the cut off date but not having re-offended by that date always have the potential to further re-offend again and again. Furthermore prisoners released having never re-entered prison or even who have returned once, twice or more but not having committed a more serious offence (than say the first) always have the potential to do so.

To illustrate the difficulties this causes in the measurement of seriousness, consider naive suggestions of classifying prisoners by their most serious offence (so far) committed, presumbly with a view to exploring differences in prevalence or incidence as a result of gender, race or other factors. But the classification of 'most serious' is meaningless in the absence of complete follow-up over an individual's lifetime , since tomorrow, next week, or in 10 years' time he/she may commit a more serious offence. Thus there is always an element of uncertainty and bias as well as a serious practical limit to which retrospective knowledge of this kind can be helpful. All we can hope to do, is to study dynamically the movements of individuals between crime seriousness levels or classifications.

(1a) "One-Step" method

In Broadhurst and Maller (forthcoming) and Broadhurst et al

(1988) we demonstrated success in fitting a Weibull mixture model to the distribution of the time to first recidivism. This model has the form

$$P\{ T \leq t \} = P.[1 - \exp(-(\lambda t)^{\alpha}] \quad , \quad t \geq 0 \ , \qquad (M)$$

where T is a random variable denoting the (possibly censored) time to first return, and P, λ, and α are parameters to be estimated. Parameter P measures the probability of ultimate return to prison, that is, the recidivist probability, while λ is related to the rate of return to prison (how quickly). In the above papers, estimates of probability (P) were used to demonstrate significant differences between races, gender, release type and so on.

There is no difficulty in extending the use of this model to describe the distribution of the time to fail for the first, second, third, etc. (n-th) recidivism, conditional on release from prison following the previous term of prison {(n-1) - th recidivism, where n = 2, 3, ...,} provided of course the model does give a good fit to these distributions as it proved to in the case of first recidivism. In practise the number of subjects returning for a second, third or more times to prison falls away rapidly and in the present data set we only attempt to estimate up to the tenth recidivism or return to prison. Except for Aboriginal prisoners there are too few cases to make reliable estimates even to this extent.

Having determined these probabilities of 'one-step' recidivism, we address the question of progression of seriousness by classifying the seriousness of the last known offence (nth offence) against that of the previous offence [(n-1)-th] in two-way tables, with the intention of testing for a tendency towards more or less serious offences. Here we again encounter the problem of censoring in that those not (yet) failing since their last term of prison (n-th), but having been released following their last term [(n-1) - th], cannot of course be classified according to the seriousness of their next offence (n-th). Two new methods are under investigation to deal with this aspect of the censoring.

Another troubling aspect of "censoring", apparently not often recognised in the literature, is the (tempting) tendency to "label" offenders by crimes committed so far. Thus a person whose record contains (say) a theft offence, may be labelled a "thief", and his/her corresponding characteristics employed in an analysis which compares "thieves" against "rapists", say. Yet the offender always possesses the potential to become a "rapist" in the future, and indeed our data contains (of course) examples of "rapists" whose prior records contain theft offences (among many others). From this point of view there is little wonder that many studies comparing criminal "types" give varying, contradictory or inexplicable findings. It simple terms it seems unwise to generalise about a criminal "type" on the

basis of selecting a sample or population on the basis of the first, last or even most frequent offence.

It does seem to us less open to criticism to "label" serious offenders; relatively few in any prison population (or in the population at large!) ever commit a rape (or homicide, say) offence, and once having done so, an offender certainly does enter a category worthy of separate attention.

(1b) Results - One-step estimation of recidivism

Figures 1-9 show the probabilities of recidivism for the first to ninth returns to prison by race and gender. It is apparent, as with our previous work with first recidivism, that there are large differences in overall recidivism and in the rate of failure by race and gender. Not unexpectedly, given previous work (eg. Nuttall 1977, Phillpotts and Lancuke 1979, Maltz 1984, Ward 1987, Gottfredson et al 1974 cf. the Salient Factor Score), it is observed that the probability of recidivism increases the more times a prisoner returns to prison. Table 1 gives the estimated probabilities of return, with 95% confidence intervals, and shows that (with the possible exception of female non-Aboriginals) the probability of a subsequent return to prison after the fifth to sixth recidivism events is close to absolute certainty. Thus the old adage that previous behaviour is the best predictor of subsequent behaviour finds support in these results. However, the results do not tell us whether prisoners are returning for the same, more or less serious offences.

TABLE 1

One-Step Probabilities of Recidivism

	Male NonAborig			Male Aboriginal			Female NonAborig			Female Aborig		
R	p	ci	n	p	ci	n	p	ci	n	p	ci	n
1	.45	(.44,.47)	11051	.76	(.74,.78)	3639	.36	(.27,.47)	720	.69	(.62,.65)	971
2	.63	(.60,.65)	3538	.84	(.82,.86)	2292	.43	(.33,.54)	153	.75	(.67,.81)	490
3	.69	(.65,.72)	1603	.88	(.85,.90)	1598	.93	(.26,.62)	48	.79	(.72,.85)	290
4	.76	(.70,.81)	803	.89	(.86,.91)	1147	-		14	.84	(.76,.90)	199
5	.72	(.65,.79)	417	.88	(.85,.91)	865	-		9	.89	(.79,.94)	142
6	.81	(.68,.89)	223	.93	(.89,.96)	631	-		8	.89	(.80,.95)	108
7	.80	(.66,.89)	117	.91	(.86,.94)	472	-		6	.95	(.85,.98)	88
8	.79	(.54,.92)	68	.94	(.88,.97)	351	-		3	.94	(.83,.98)	75
9	.87	(.69,.96)	40	.95	(.90,.97)	278	-		1	.97	(.67,.99)	65
10	-		28	.95	(.88,.98)	222	-		0	.98	(.53,1.0)	56

p: Probability of Failing ci: 95% Confidence Interval n: No. of Subjects

R: Recidivism Number

Table 2 shows male prisoners, of both races, classified by

the 20 point seriousness scale described above (Table A) for the first and second principal offences for which they were returned to prison. The column labelled "0" denotes the number of prisoners yet to commit a second offence leading to prison; these are 'censored' observations. The column labelled "21" lists those offences involving breaches of various non-custodial court orders which were excluded from the seriousness scale.

(Insert table 2)

Even with our large data set, Table 2 is sparse and difficult to interpret. The table illustrates the relative rarity of the more serious offences and the chances of repetition. To give a broad description of tendencies to greater or lesser seriousness for corresponding two-way tables up to the fifth to sixth recidivism, the 20 point classification has been condensed to three categories consisting of more serious, less serious and offences in the same seriousness category. The proportions of prisoners in each category are shown in Table 3 for each subsequent offence.

In Table 3 the "0" column is absent because the censored observations have been allocated to one of the three seriousness categories by an "imputation" procedure (based on a fitted Weibull model for the offence category and the observed time at risk of the censored observations), which will be described in a forthcoming report. We refer to Table 3 and similiar tables as "adjusted"; note that Table 3 also

contains the marginal (adjusted) total numbers of individuals on which the proportions in the body of the table are based.

TABLE 3. PROBABILITY OF RECIDIVISTS BY SERIOUSNESS

Recidivism number of returns +	SAME 1 = 2	LESS 1 > 2	MORE 1 < 2	TOTAL n (adjusted)
MALE non-Aborigines				
1	.30	.37	.33	5,055.3
2	.31	.31	.38	2,134.3
3	.32	.32	.36	1,080.2
4	.32	.31	.37	552.6
5	.35	.35	.31	298.8
MALE Aborigines				
1	.33	.35	.33	2,785.1
2	.33	.35	.32	1,938.4
3	.34	.31	.35	1,379.9
4	.35	.31	.35	1,003.9
5	.33	.33	.33	750.9
FEMALE non-Aborigines				
1	.27	.26	.47	252.0
2	.25	.35	.38	54.5
3	---	---	---	16.0
4	---	---	---	9.0
5	---	---	---	8.0
FEMALE Aborigines				
1	.39	.28	.33	630.0
2	.41	.30	.29	351.9
3	.41	.25	.34	205.4
4	.39	.31	.30	159.8
5	.45	.23	.32	114.8

{the number 1 denotes outcome following release from the 1st prison term , etc.}

Two analyses were done on the adjusted numbers; first we looked at overall probabilities of failing, to see if there were higher probabilities of failing for more serious offences. Secondly, since total times at risk vary between sub-groups (i.e. race and gender), it is also relevant to

measure whether the rate of or time to fail, is faster or slower for less or more serious recidivism.

Table 3 can be analysed by ordinary contingency table methods and produces some interesting results. European males and females show a tendency to return for more serious offences at some steps. But for Aboriginal males the proportions are fairly even whereas Aboriginal females show a marked tendency to repeat the same offence category.

As previously noted there are considerable variations between times at risk for different groups, (i.e. the time free between terms of imprisonment) thus groups having similiar overall probabilities of return, such as male Aborigines in Table 3, may have great differences in rates of return. That is, the time to reconviction may be shorter for some than for others. In practical terms those with high rates of return are at greater risks of failing within a given time span.

We assume for the analysis of rates that the numbers of individuals in the cells of Table 3 have Poisson distributions with means proportional to the total time at risk in the same cell. Assuming the constant of proportionality has a loglinear relationship to the covariates race, gender and the recidivism event, we can use the methods of Holford (1980) and Frome (1983) to fit a multiplicative model for rates. The calculations are readily done by the GLIM package which provides a log likelihood ratio test for the effects of interest.

Fitting the covariates race, gender, recidivism event (first, second and so on) and the condensed seriousness category shows that many effects are significant or highly significant including the highest order interaction, so the interpretation of the tables is complex. We consider gender and race separately. For male non-Aborigines there were large effects of seriousness category and recidivism and their interactions. The rates are given in Table 4 below and are based on a minimum of 84 years follow up for each cell up to the fourth recidivism for male non-Aboriginal and likewise, 200 years for Aboriginal prisoners but considerably less for females.

The rates in Table 4 measure the average rate of offending per person year for each interaction of seriousness category and recidivism. Thus in the first cell relating to male non-Aboriginals the rate of .49 can be interpreted as implying that one person failing on his first return in that offfence category would be expected to fail in 1/.49 = 2 years.

As with our previous measures, this measure also shows an increase in the rate of risk with each subsequent return to prison. For males there was also a significant tendency for higher rates in the more serious category and in repetition of offences, although rates level off by the sixth return. Male Aboriginals had much higher rates than non-Aboriginals. These rates demonstrate a tendency for the incidence of offending to increase with each return to prison.

TABLE 4. RATES BY SERIOUSNESS CATEGORY AND RECIDIVISM

number of recidivism	SAME 1 = 2	LESS 1 > 2	MORE 1 < 2
MALE non-Aborigines **			
1	.49	.34	.45
2	.70	.66	.65
3	.84	.71	.73
4	.83	.80	.90
5	.85	.80	.84
MALE Aborigines **			
1	.75	.54	.60
2	1.03	.70	.74
3	1.04	.77	.92
4	1.32	1.00	.95
5	1.22	1.07	1.18
FEMALE non-Aborigines			
1	.24	.40	.26
2	1.81	1.30	.78
3 *	----	----	---
4 *	----	----	---
5 *	----	----	---
FEMALE Aborigines **			
1	.49	.45	.38
2	.64	.75	.52
3	1.35	.96	1.24
4	1.50	1.91	.87
5	1.88	1.41	1.55

note: * cells with less than 5 years follow up are suppressed; ** cells have a minimum of 17 years follow up.

(2a) Progression of Seriousness Method

We come now to our second method for measuring an individual's propensity to commit a more serious crime, by considering his/her entire prison record. Specifically, we designate as a signal offence the first offence leading to incarceration, and estimate the probability of committing a more serious offence than this by use of the Weibull mixture model and the offence seriousness ranking given in Table A. Thus the time taken (in days) for each individual to commit

such an offence is calculated (this time is censored, of course, if no offence more serious than the first was committed before the cut-off date), and the model (M) fitted to this data set. By specifying subgroups of interest such as gender, race, age, etc., probability estimates of progression of seriousness for these sub-groups can be obtained. Confidence intervals calculated on these estimates allow assessment of differences between groups.

Having analysed the time to the 'first' more serious offence in this way, we now designate as a signal offence this offence (if it occurred) and calculate the time to commit an even more serious offence than this, again as judged by the seriousness ranking of Table A. The number of individuals eligible for consideration in this analysis will be smaller than the total, since those not committing an offence more serious than the first will be omitted. And the time to commit the 'second' more serious offence will again be censored , since of course no such offence need be committed by the cutoff date.

Proceeding in this way, the 'third', 'fourth', etc. more serious events can be defined, and so a series of 'ladder points' in an individual's career can be defined, where a more serious offence than all those preceding has occurred. Between these 'ladder points', there may be offences of lesser seriousness on record.

In interpreting these analyses it should be kept in mind,

especially when considering subgroupings or tabulations by offence seriousness category, that individuals committing an offence of great seriousness such as rape or homicide at some stage in their career will have a lower probability of committing a more serious offence later.

Further analysis now proceeds as with the one step method, in that events at the first, second, etc., seriousness 'ladder points' can be tabulated to show which offences occurred. Adjustment for censoring can be made in these tables just as with the one step analysis, using the Weibull mixture model fitted in offence categories at the 'ladder point' under consideration.

Results

(2b) Progression of Seriousness Results

The first half of Table 5 shows the estimated probabilities of committing an offence equal or greater in severity than the previous signal offence, for the first four ladder points in an individual's record. Thus the estimate of .34 for male non-Aboriginals at the first ladder point shows that 34% (with a 95% confidence interval of 32%-35%) are predicted to ultimately commit an offence of severity equal to or greater than their first offence. Of those who do this , 42% (CI = 39%-45%), are predicted to ultimately commit an offence of equal or greater severity than this offence, etc.

The second half of Table 5 shows the estimated probabilities of ultimately committing an offence strictly greater in

severity than the signal offence. It is immediately obvious from both halves of the table (representing two alternate definitions of progression) that there is a substantial and increasing probability of committing equal or more serious offences, for Aboriginals and male non-Aboriginals. There is also a substantial probability of male non-Aborigines progressing to offences of strictly greater severity (more than 20% do so at each ladder point) and for male Aborigines the same is true with double the percentages; fully 46% of male Aborigines are estimated to progress to an even more serious crime. For female Aboriginals and non-Aboriginals, similiar probabilities are estimated as far as can be obtained from the limited data available on them.

TABLE 5 PROGRESSION OF SERIOUSNESS (20 POINT CODE)

MALE	ABORIGINE			NON-ABORIGINE		
	p	ci	n	p	ci	n
equal or greater severity ladder point						
1	.63	(.60,.65)	3638	.34	(.32,.35)	11047
2	.66	(.63,.69)	1805	.42	(.39,.45)	2551
3	.71	(.66,.75)	912	.50	(.42,.57)	731
4	.72	(.65,.78)	491	.48	(.37,.60)	220
strictly greater severity ladder point						
1	.46	(.44,.49)	3638	.24	(.22,.25)	11043
2	.43	(.34,.54)	1196	.21	(.17,.25)	1553
3	.34	(.09,.71)	271	.22	(.07,.50)	172

FEMALES	ABORIGINE			NON-ABORIGINE		
	p	ci	n	p	ci	n
equal or greater severity ladder point						
1	.62	(.54,.69)	971	.33	(.19,.52)	720
2	.63	(.54,.71)	412	.29	(.17,.45)	114
3	.65	(.55,.74)	197	-	-	19
4	.77	(.66,.85)	104	-	-	5
strictly greater severity ladder point						
1	.48	(.35,.60)	970	.21	(.11,.37)	720
2	-	-	262	-	-	71
3	-	-	43	-	-	7

p = ultimate probability; ci = 95% confidence interval; n = number of subjects.

The previous analysis does not indicate which of the more serious offences were committed and where in an individual's record they occurred. A detailed analysis of 'careers' is very difficult due to the number and variety of offences that occur in the records of many prisoners, and we do not attempt such an analysis here. A more detailed account illustrating the 'careers' of prisoners incarcerated for sex offences is contained in a forthcoming report. (Figure 10 shows an example of the careers of three prisoners imprisoned for sex or homicide offences up to the cut off date, with ladder points as defined by the 20 point code given for greater than or equal severity or for strictly greater severity.)

But we can show which offences occurred on the next more serious after the first offence in Table 6. Note that this table like Table 2 which describes the one-step transitions (from first to second incarceration) contains censored individuals in the column marked '0', and should be 'adjusted' before analysis in the way described for the one-step analysis of such tables. This adjustment does not affect proportions within rows of the table (as shown in Maller 1990), however, so valid comparisons across rows can be made within the table. This table shows that even progression to the next more serious offence usually involves offences in the low to middle end of the 20 point scale.

For example of 2,041 male non-Aboriginal cases who committed offences such as motor vehicle theft and theft offences incurring sentences of less than 6 months (seriousness rank 9), 1,151 had not returned by the cut-off date but 462 had returned for the equivalent offences and the remaining 428 had returned for more serious offences. Of these a significant proportion returned for very serious offences; 5 committed homicide offences (rank 19 and 20), 15 rape or incest (rank 18), 6 sale of narcotics (rank 17) and 50 robbery, serious assault/grevious bodily harm or lesser sexual offences (rank 15 and 16). The rest, being the bulk however, committed either more serious property offences (n=175) or less serious assaults (n=59) or the sale of cannabis (n=83), a few had offences against justice (n=7) and there was one case of 'driving causing death'.

Finally a measure of when in an individual's record the next most serious offence occurred, can be given as in Table 7. This shows the distribution of the number of offences occurring before the next more serious offence. Notable from this table is that for non-Aboriginals the next more serious usually occurs on the next offence, i.e. on the second offence, although a substantial proportion (3,050/11042 =28%) occur after two offences or terms of prison. An average of 1.42 offences (for non-Aboriginal males) and 1.27 for non-Aboriginal females occur between the first and the next more serious offence. For Aboriginal males, however, the average is 2.00, and for Aboriginal females the average is 1.67.

TABLE 7. DISTRIBUTIONS OF NUMBERS OF OFFENCES OCCURRING BETWEEN THE FIRST OFFENCE AND NEXT MORE SERIOUS OFFENCE (EQUALITY PERMITTED)

	MALES		FEMALES	
NO.	NON-ABORS	ABORS	NON-ABORS	ABORS
1	7343	1303	558	479
2	3050	1771	143	410
3	431	410	15	45
4+	218	154	4	36
TOTAL	11042	3638	720	970
MEAN NUMBER OF TERMS				
	1.42	2.00	1.27	1.67

DISCUSSION

The work described above outlines some of the problems of measurement and analysis that confront the researcher examining the criminal careers of prisoners. More work is yet to be done, in particular, the detailed wholistic description of a prisoner's offences over the entire period of our records, the issue of specialisation (see for example Kempf 1987, 1988, Klein 1984) and the comparison of various alternative severity and classification scales.

A number of matters, however, have been resolved. Firstly, Table 1 and Figures 1-9 show clearly that the Weibull mixture model continues to provide a consistent description

of failure rates at second, third and so on, returns to prison. This data shows conclusively that the probabilities of failure increase substantially with each successive return. It is extremely important to emphasise this fact particularly as cross-sectional studies and census samples may frequently fail to control for the strong effect of prior terms of imprisonment on failure rates. We now have a good idea of the probabilities of failure for 'persistent' offenders.

In addition we may now say that of the estimated 45% of male non-Aborigines who will return to prison for at least one further term some 20% to 24% (depending on the seriousness scale employed) will return for a more serious offence. For male Aborigines, 76% are estimated to return at least once for any offence and between 43% to 47% will come back to prison for a more serious offence. For females the proportions are similiar: 17-22% of non-Aborigines will return for a more serious offence (while 38.5% will return for any offence) whereas 35-48% of Aborigines return for a more serious offence (while 69% will return for any offence; see Broadhurst and Maller 1988 for further details of 'any offence' probability estimates). This analysis does not readily account for the fact that for some prisoners, first offences (leading to imprisonment) were very serious and therefore the chance of committing a more serious offence was low or impossible. To account for such problems detailed descriptions of individual records are required (see

illustration in Figure 10). An example of such these when sex and homicide offences are the signal offence will be reported in a forthcoming paper.

The 'one-step' procedure while limited (Tables 2 and 3), has shown fairly clearly that there is a tendency to 'drift' toward more serious offences amongst males and non-Aboriginal females. The general pattern of seriousness (using our condensed seriousness scale) was rather consistent step by step in that approximately equal proportions become less, equal or more serious, perhaps suggesting a substantial degree of versatility or randomness in one event compared to the next. Nevertheless repetition was very high considering that a 20 point scale was used. We have yet to fully explore the implications of such a regular pattern, but it is clear that prisoners who return to prison more than once are likely to return for a more serious offence. The progression to more serious method which looks for a record with an offence equal or more serious or strictly more serious than the first offence bears out this finding but shows that this is a very much more complex process than the concepts of specialisation or progression readily allow. This differs from Blumstein et al's (1986) finding that no clear trends in the progression of seriousness were found for adult offenders who were arrested more than once. This difference may of course be the result of using arrest rather than prison records.

One aspect of this study that proved unexpected was the high

degree of similiarity between the results generated by the different seriousness scales employed. While a certain degree of interchangeability was expected between the 20, 10 and 5 point scales given their identical origins (even so differences were expected to emerge as classification boundaries narrowed or widened) it was not assumed that a scale based on length of sentence or specifically time in prison would produce similiar results given the vagaries and complexities of sentencing practices.

Table 8 shows the comparison between the seriousness ranking procedures employed and the estimates of the probability of committing a more serious offence than the first. This table does show that with the broader classification of seriousness (5 point scale) and the consequently greater difficulty in progressing to a more serious offence the probability estimate for progressing to a more serious offence declines as expected. Nevertheless the differences produced are not large and seriousness measured by time in prison is almost identical to the 20 and 10 point scales and

TABLE 8 COMPARISON OF OFFENCE SEVERITY SCALES

SCALE	MALE NON-ABORS (n=11,043)		MALE ABORS (n=3,638)	
	p	ci	p	ci
probabilty estimate for next most serious				
20 point	.24	(.22, .25)	.46	(.44, .49)
10 point	.23	(.21, .25)	.46	(.44, .49)
5 point	.20	(.18, .22)	.43	(.40, .45)
time in prison	.23	(.22, .24)	.47	(.44, .49)

SCALE	FEMALE NON-ABORS (n=720)		FEMALE ABORS (n=970)	
	p	ci	p	ci
probabilty estimate for next most serious				
20 point	.21	(.11, .39)	.48	(.35, .60)
10 point	.22	(.10, .42)	.48	(.35, .61)
5 point	.17	(.10, .27)	.41	(.30, .54)
time in prison	.25	(.02, .89)	.35	(.25, .47)

p = estimate of probabilty of returning for a more serious offence than first; ci = 95% confidence intervals.

the difference with the 5 point scale is not statistically significant. This suggests that current sentencing practice equates very closely with the our severity scales measurement of progression, that is, sentences match in an orderly way the appropriate severity of offence. But we can

not rule out the fact that aggregating so many cases may merely cancel out or obscure any real differences in practice.

In examining the rates of failing (where Table 4 controls for the number of subjects to provide a per person per year rate) we can demonstrate that the more frequently one returns to prison, the less time at large there usually is. In any accurate assessment of risk the 'exposure' time must be included and treated as an important distinguishing factor. This refinement coupled with the qualitative assessment of the seriousness of subsequent recidivism now means it is possible to evaluate penal interventions more sensitively on the basis of the degree to which they reduce the harm done by offenders. For critics of recidivism research, who regard recidivism measures as crudely failing to account for whether subsequent offending is worse or less serious this method begins to provide useful answers.

Finally it should be stressed that the parameters of participation, frequency, seriousness and duration of 'criminal career' specified by the National Academy of Sciences panel on criminal career research (see Blumstein et al, 1986) as the necessary elements in properly distinguishing between low and high risk offenders are extremely difficult to measure. Furthermore the analysis of these characteristics implies the availability of 'perfect' data sets of individual offenders over long periods of time recording all these details. Even with incomplete data

records over the duration of offenders' 'careers' we can employ statistical methods such as fiting the Weibull mixture model to estimate risks or test for differences between groups of offenders. But all this is dependent on the accuracy of offending records and offence self report studies (despite their own methodological difficulties) are thought to provide the necessary additional information absent from official records. As yet no such comprehensive individual data base has bèen described in terms of the criminal career paradigm and the National Academy's review of a number of disparate studies measuring separately aspects of participation, frequency and duration of offending does not suffice. In this regard it must be said that the theoretical speculations and crime control policies advocated by 'criminal career' researchers (eg. prediction, classification and incapacitation) advance well ahead of the available data. While statistical sophistication exists to examine 'criminal careers' comprehensive records to match this sophistication in criminology do not.

In Australia no comprehensive studies of the self-reported offending of incarcerated offenders are available in order to help measure the 'true' frequency of offending and we are dependent on official records (in this case prison records) to estimate this dimension. Certainly priority should be given for such research to be undertaken.

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FIGURE 10 EXAMPLES OF INDIVIDUAL'S RECORDS BY THE 20 POINT SERIOUSNESS SCALE

Prisoner A, an Aboriginal male has ladder points at 1st, 3rd and 7th offences, prisoner B (non-Aboriginal male) at 1st, 5th and 6th offences, while prisoner C a female Aborigine has ladder points at the 1st, 4th, 5th and 9th offences as judged by the 20 point code when only strictly more serious offences are counted.

If offences of equal or greater severity are counted as ladder points the differences are as follows; A has ladder points at 1st, 2nd, 3rd and 7th offences; B at 1st, 5th and 6th offences (the same as with the stricter definition); and C at 1st, 2nd, 3rd, 4th, 5th and 9th offences.

TABLE 2: MALES: ONE STEP TRANSITION MATRICES

SECOND OFFENCE

NON ABORIGINAL

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	244	15	5	12	30	2	14	0	2	21	5	3	13	3	1	3	2	3	1	0	0	0	379
2	184	6	5	0	40	1	15	1	1	16	6	2	3	8	0	2	1	1	2	0	0	0	294
3	608	8	3	53	25	6	20	0	1	31	9	5	12	10	0	2	3	3	1	0	2	3	805
4	1294	21	14	35	419	10	77	1	6	66	42	8	30	18	1	5	10	6	0	1	1	1	2066
5	151	3	2	5	13	28	10	1	5	24	10	1	1	7	0	0	4	0	0	0	1	0	265
6	974	4	6	24	154	7	149	1	12	47	17	5	13	16	0	1	5	0	1	1	0	4	1441
7	20	0	0	0	1	0	1	0	0	2	1	2	1	0	0	0	1	2	0	0	0	1	32
8	112	2	0	3	4	2	6	0	3	22	10	3	9	1	0	1	7	0	2	0	0	2	189
9	1136	19	13	33	115	25	55	0	21	328	55	6	118	38	0	6	29	4	11	3	0	26	2041
10	384	7	2	9	41	4	23	1	4	63	22	5	21	11	0	2	9	1	2	0	0	7	618
11	378	4	2	7	8	0	3	0	0	8	3	6	5	2	0	0	1	7	0	0	0	5	439
12	766	5	4	19	30	2	7	0	7	48	8	3	36	1	0	3	8	2	3	0	0	66	1018
13	306	1	4	4	16	9	14	0	2	41	18	7	10	31	0	5	7	0	1	0	1	1	478
14	47	0	0	0	2	0	1	0	0	0	0	0	0	0	2	0	0	0	0	0	0	1	53
15	112	0	1	0	1	0	4	0	1	5	0	0	1	3	0	1	2	0	1	1	0	6	141
16	337	2	2	1	8	3	4	0	3	11	4	0	3	6	0	2	13	0	1	0	1	29	430
17	119	0	0	1	1	0	2	0	0	2	2	2	3	0	0	0	1	3	0	0	0	7	143
18	100	0	0	0	2	0	2	0	0	1	0	1	1	2	0	0	0	0	2	0	0	8	119
19	48	1	0	0	1	0	0	0	1	1	0	0	0	0	0	1	1	0	0	0	0	7	61
20	23	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	28
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

ABORIGINAL

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	19	4	3	1	8	1	1	0	0	5	3	0	0	4	0	0	1	0	0	0	0	0	50
2	23	0	3	0	8	1	9	0	0	9	4	0	1	4	0	0	1	0	0	0	0	0	63
3	38	1	0	3	1	9	6	0	0	9	8	0	2	7	0	0	1	0	1	0	0	0	86
4	131	1	3	3	75	5	36	0	4	36	14	1	4	14	0	2	3	0	2	1	0		335
5	143	0	2	7	5	116	22	0	6	75	19	0	2	42	0	0	11	0	0	2	2		454
6	238	5	4	5	60	13	69	0	1	43	18	0	5	16	1	1	4	0	1	3	0	0	487
7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8	20	0	0	3	2	2	7	0	3	18	3	0	2	3	0	0	0	0	0	1	0	0	64
9	308	12	5	10	56	60	63	0	24	403	53	0	34	66	1	3	17	0	5	0	1	6	1127
10	92	4	2	1	11	20	11	0	8	38	15	0	1	17	0	1	4	0	0	1	0	3	229
11	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
12	24	0	0	1	3	1	2	0	3	17	1	1	5	1	0	0	1	0	2	0	0	9	71
13	161	0	4	9	13	35	29	0	6	56	19	0	8	73	0	4	8	0	5	0	0	1	431
14	3	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	6
15	15	0	0	0	2	2	1	0	0	4	2	0	0	2	0	0	0	0	0	0	0	6	34
16	38	0	0	2	2	5	7	0	0	13	4	0	0	15	0	2	6	0	0	1	0	3	98
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	28	1	0	1	1	4	3	0	4	7	3	0	2	1	0	0	0	0	1	1	0	6	68
19	9	0	0	0	0	0	2	0	0	3	0	0	0	2	0	0	0	0	0	0	0	2	18
20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

THIRD OFFENCE

NON ABORIGINAL

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	42	7	2	5	13	1	2	0	1	9	2	2	8	1	0	0	1	0	1	0	0	1	93
2	28	2	1	2	14	1	4	0	0	6	2	0	2	0	0	0	0	0	0	0	0	0	62
3	121	6	1	14	8	2	10	0	1	11	5	0	8	2	0	3	3	4	0	1	1	0	201
4	474	8	7	12	223	4	36	0	6	42	18	6	28	16	1	4	6	3	1	0	1	1	897
5	40	0	1	1	2	18	11	0	1	13	3	1	0	4	0	0	3	0	0	0	0	0	98
6	236	1	1	5	56	6	37	0	1	20	10	1	7	8	0	1	4	1	1	0	0	3	399
7	4	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	6
8	33	0	0	2	2	3	3	0	1	8	6	0	5	1	0	1	0	0	0	0	0	1	66
9	299	11	6	18	58	14	18	0	11	149	30	3	51	13	0	6	11	1	1	2	3	12	717
10	100	3	2	4	18	8	6	0	1	22	11	0	12	8	1	1	0	0	0	0	0	1	195
11	34	0	0	0	3	0	2	2	0	3	2	1	1	1	0	0	0	0	0	0	0	3	51
12	156	2	0	4	6	0	1	1	0	20	1	3	13	2	0	1	7	1	1	1	1	27	248
13	71	3	2	3	9	5	12	0	3	15	7	0	6	12	0	1	2	1	0	1	0	3	176
14	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
15	19	1	0	0	1	0	0	0	0	0	2	0	2	2	0	2	0	0	1	0	0	2	32
16	45	0	1	1	2	1	3	0	0	2	2	0	4	0	0	0	3	0	1	0	0	12	77
17	18	0	0	0	0	0	1	1	0	2	0	0	1	0	0	0	1	0	0	0	0	2	26
18	14	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	2	18
19	3	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
20	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
21	88	0	0	1	11	1	1	1	0	14	2	0	10	1	0	1	7	2	4	1	1	26	172

ABORIGINAL

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	12	0	1	1	1	1	2	0	0	4	3	0	0	1	0	0	1	0	2	0	0	0	29
2	9	2	0	1	4	2	1	0	0	4	1	0	1	1	0	0	0	0	0	0	0	0	26
3	16	0	0	2	2	3	6	0	0	8	3	0	0	3	0	0	1	0	1	0	0	0	45
4	79	3	2	4	69	6	28	0	3	20	14	0	3	8	0	2	2	0	0	0	0	1	244
5	68	0	0	8	12	83	15	0	6	33	14	0	1	24	1	0	4	0	2	1	0	1	273
6	94	2	2	3	39	12	41	0	4	37	8	0	1	16	0	1	5	0	0	0	0	1	266
7	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	2
8	15	1	0	2	7	3	2	0	1	15	4	0	2	3	0	1	3	0	0	0	0	0	57
9	147	3	6	9	40	50	48	1	13	299	32	0	19	41	0	2	8	0	4	0	1	4	727
10	50	2	3	4	7	10	12	0	1	38	11	0	6	14	0	0	4	0	1	1	0	1	166
11	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
12	18	0	1	0	2	1	1	0	1	14	1	0	5	3	0	2	0	0	0	0	0	1	50
13	88	0	11	1	5	31	28	0	0	38	10	0	2	36	0	1	12	0	1	0	0	0	264
14	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
15	2	0	0	0	2	0	1	0	0	1	0	0	0	3	0	0	1	0	0	0	0	0	10
16	17	0	1	0	3	7	3	0	0	5	1	0	1	10	0	1	3	0	2	0	0	1	75
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	3	0	0	0	1	0	3	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	9
19	3	0	1	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0	0	1	8
20	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	2
21	11	0	0	1	4	1	0	0	0	6	1	0	1	3	0	1	0	0	0	0	1	0	30

TABLE 6 : ONE STEP PROGRESSION OF SERIOUSNESS

NEXT OFFENCE OF EQUAL OR GREATER SEVERITY

FIRST OFFENCE

Male Non Aboriginal

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	
1	191	20	6	16	41	2	19	0	2	29	6	4	18	4	1	4	2	4	1	0	0	0	379
2	153	0	6	0	54	1	19	1	1	20	7	2	7	10	0	2	1	1	2	0	0	0	295
3	548	0	0	76	34	8	27	0	1	42	13	8	16	13	0	2	4	4	1	0	2	0	805
4	1045	0	0	0	604	13	110	1	8	98	61	12	47	26	1	8	13	8	0	1	1	0	2066
5	148	0	0	0	0	37	12	1	6	32	14	2	1	9	0	1	4	0	0	0	0	0	273
6	900	0	0	0	0	0	300	1	21	97	32	11	27	32	0	1	10	0	1	1	0	0	1441
7	22	0	0	0	0	0	0	1	0	2	1	2	1	0	0	0	1	2	0	0	0	0	32
8	106	0	0	0	0	0	0	0	3	36	12	3	11	1	0	1	7	0	3	0	0	0	188
9	1171	0	0	0	0	0	0	0	0	462	83	7	175	59	1	9	41	6	15	3	2	0	2041
10	438	0	0	0	0	0	0	0	0	0	55	8	57	24	0	5	19	4	2	1	0	0	619
11	388	0	0	0	0	0	0	0	0	0	0	14	10	6	0	0	2	16	0	0	0	0	439
12	826	0	0	0	0	0	0	0	0	0	1	0	134	11	0	7	22	5	7	0	0	0	1018
13	396	0	0	0	0	0	0	0	0	0	0	0	0	50	0	9	14	0	2	0	3	0	478
14	51	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	53
15	133	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	5	0	1	1	0	0	142
16	374	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	27	1	2	0	4	0	410
17	139	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4	0	0	0	0	143
18	126	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	4	1	0	0	132
19	60	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	60
20	28	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	28
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Male Aboriginal

1	9	5	3	1	10	1	1	0	0	6	3	0	0	5	0	0	1	0	0	0	0	0	50
2	11	0	3	0	10	1	11	0	0	11	5	0	1	5	0	0	1	0	0	0	0	0	63
3	28	0	0	3	1	11	7	0	0	11	9	0	2	8	0	0	1	0	1	0	0	0	86
4	85	0	0	0	95	6	46	0	5	45	17	1	5	17	0	2	3	0	2	1	0	0	335
5	117	0	0	0	0	131	25	0	6	82	22	0	2	48	0	0	11	0	2	2	2	0	454
6	192	0	0	0	0	0	129	0	1	73	32	0	7	27	2	2	10	0	1	4	0	0	487
7	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
8	23	0	0	0	0	0	0	0	3	24	3	0	2	4	0	0	0	0	0	1	0	0	63
9	305	0	0	0	0	0	0	0	0	544	82	0	45	100	1	9	23	0	11	1	2	0	1127
10	118	0	0	0	0	0	0	0	0	0	43	0	7	44	0	2	7	0	4	1	0	0	230
11	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	8
12	48	0	0	0	0	0	0	0	0	0	0	0	13	4	0	1	1	0	2	0	0	0	71
13	215	0	0	0	0	0	0	0	0	0	0	0	0	165	1	8	25	0	14	0	0	0	431
14	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	6
15	29	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	2	0	0	0	1	0	34
16	70	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	21	0	0	1	1	0	95
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	67	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	3	1	0	0	72
19	18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	18
20	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Female Non Aboriginal

1	28	7	0	1	1	0	1	0	1	1	0	1	0	0	0	0	1	3	0	0	0	0	53
2	7	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	9
3	66	0	0	5	7	2	5	0	0	15	5	0	2	0	0	0	2	0	0	0	0	0	114
4	44	0	0	0	8	0	2	0	0	3	1	0	2	0	0	1	0	1	0	1	0	0	63
5	19	0	0	0	0	3	1	0	0	3	2	0	0	0	0	0	0	0	0	0	0	0	28
6	53	0	0	0	0	0	1	0	0	2	1	0	0	0	0	0	0	0	0	0	0	0	57
7	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
8	8	0	0	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	0	0	0	0	11
9	86	0	0	0	0	0	0	0	0	45	16	3	13	0	0	0	3	1	0	0	0	0	171
10	58	0	0	0	0	0	0	0	0	0	2	0	0	1	0	0	0	0	0	0	0	0	61
11	37	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	38
12	37	0	0	0	0	0	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	39
13	8	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	9
14	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
16	17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	18
17	36	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	36
18	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
20	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Female Aboriginal

1	15	0	0	0	1	0	0	0	0	3	0	0	0	1	1	0	0	0	0	0	0	0	21
2	4	0	0	0	0	1	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	7
3	29	0	0	14	2	16	1	0	2	8	2	0	0	0	0	0	0	0	0	0	0	0	79
4	17	0	0	0	11	4	8	0	0	4	6	0	0	0	0	0	0	0	0	0	0	0	53
5	64	0	0	0	0	119	6	0	5	38	15	0	0	21	0	0	0	0	0	0	0	0	270
6	68	0	0	0	0	0	14	0	1	5	0	0	0	1	0	0	0	0	0	0	0	0	89
7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8	8	0	0	0	0	0	0	0	1	4	3	0	0	1	0	0	0	0	0	0	0	0	17
9	100	0	0	0	0	0	0	0	0	94	16	0	6	15	0	1	3	0	0	0	0	0	238
10	24	0	0	0	0	0	0	0	0	0	32	0	3	17	0	0	5	0	0	0	0	0	84
11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
12	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	6
13	62	0	0	0	0	0	0	0	0	0	0	0	0	14	0	0	2	0	0	1	0	0	81
14	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
15	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	6
16	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	12
17	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
18	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
19	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	4
20	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1
21	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

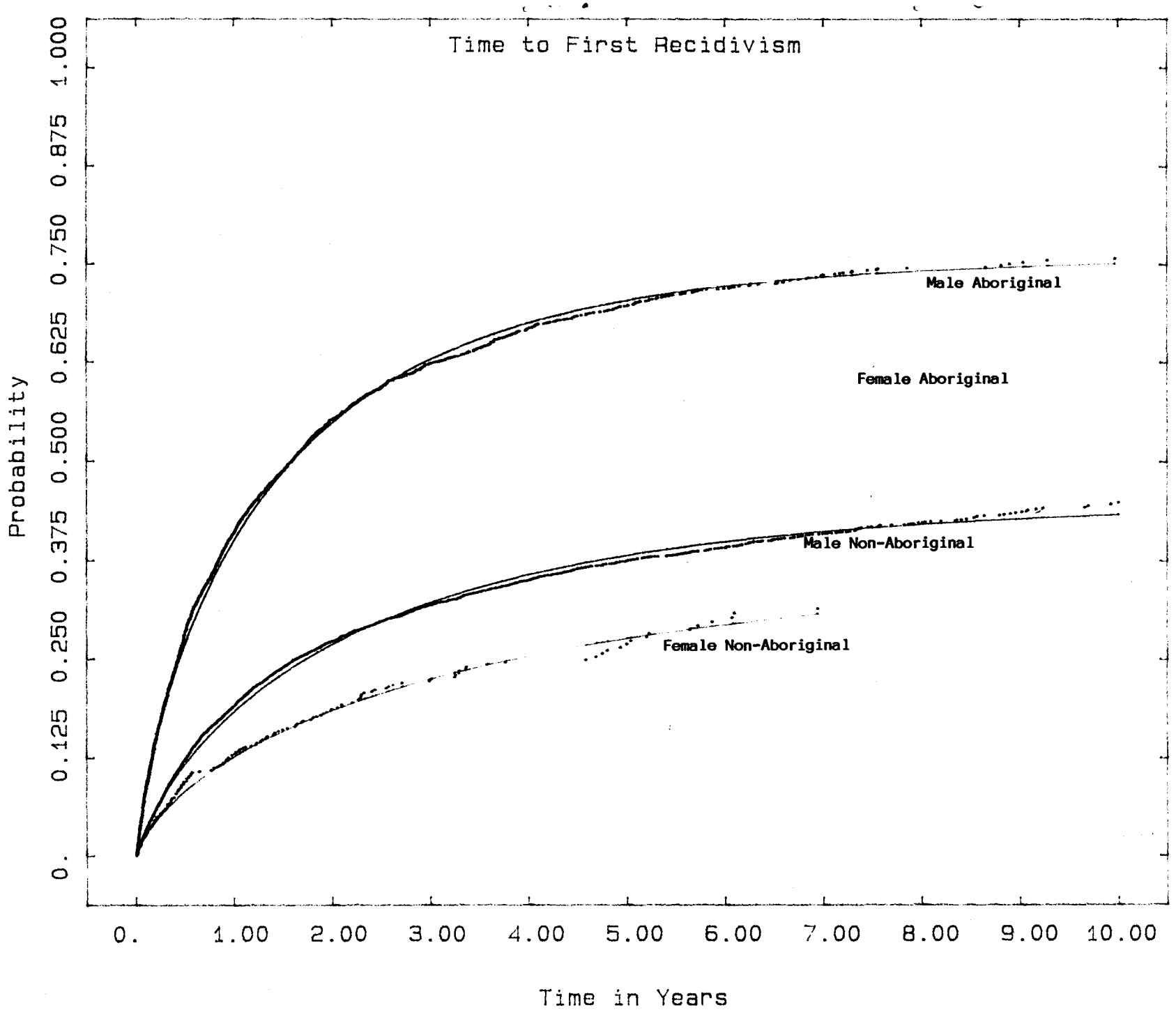
Time to First Recidivism
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Female Non-Aboriginal

Figure 1

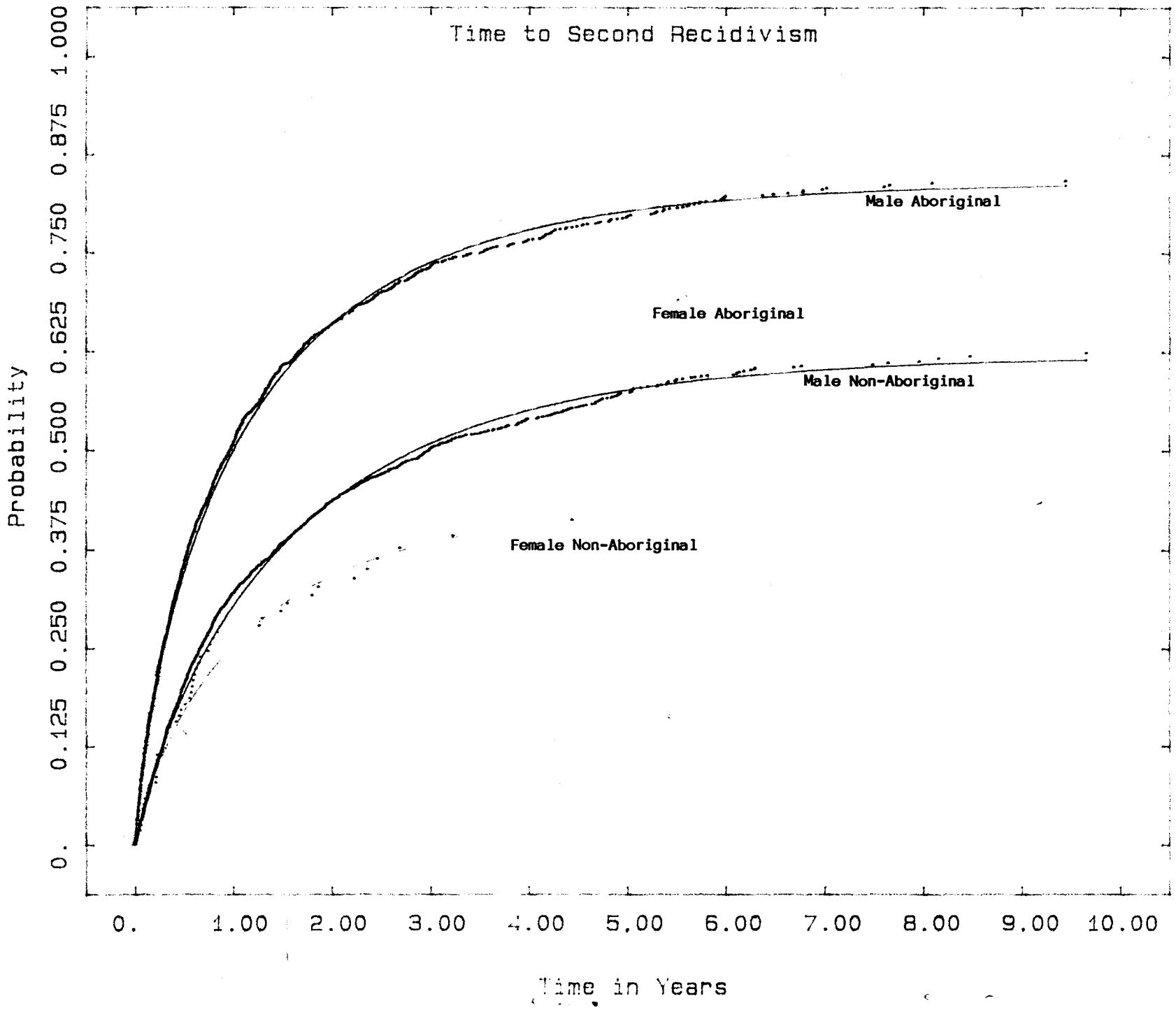
Time to Second Recidivism
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Female Non-Aboriginal
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 2

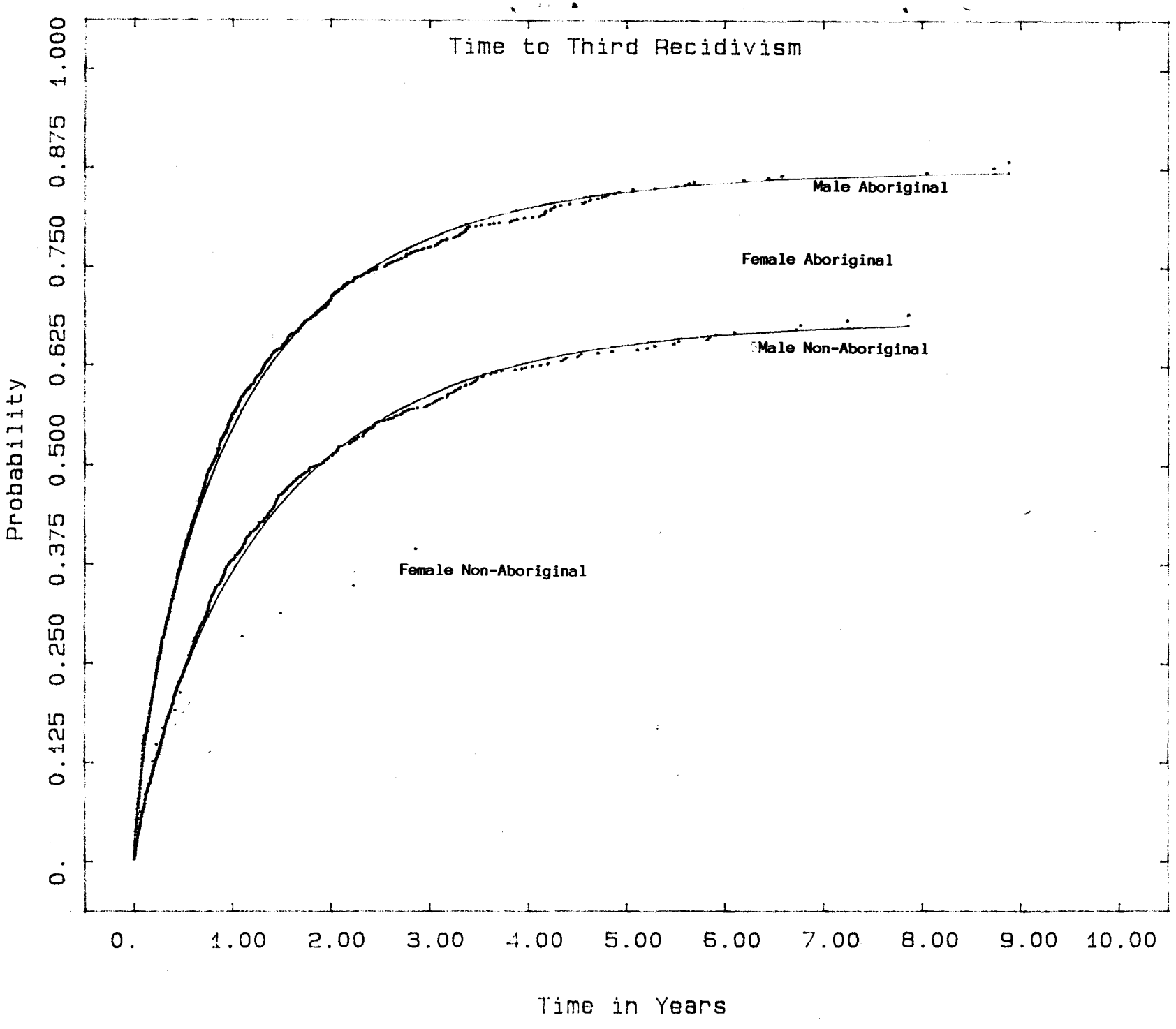
Time to Third Recidivism
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Female Non-Aboriginal
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 3

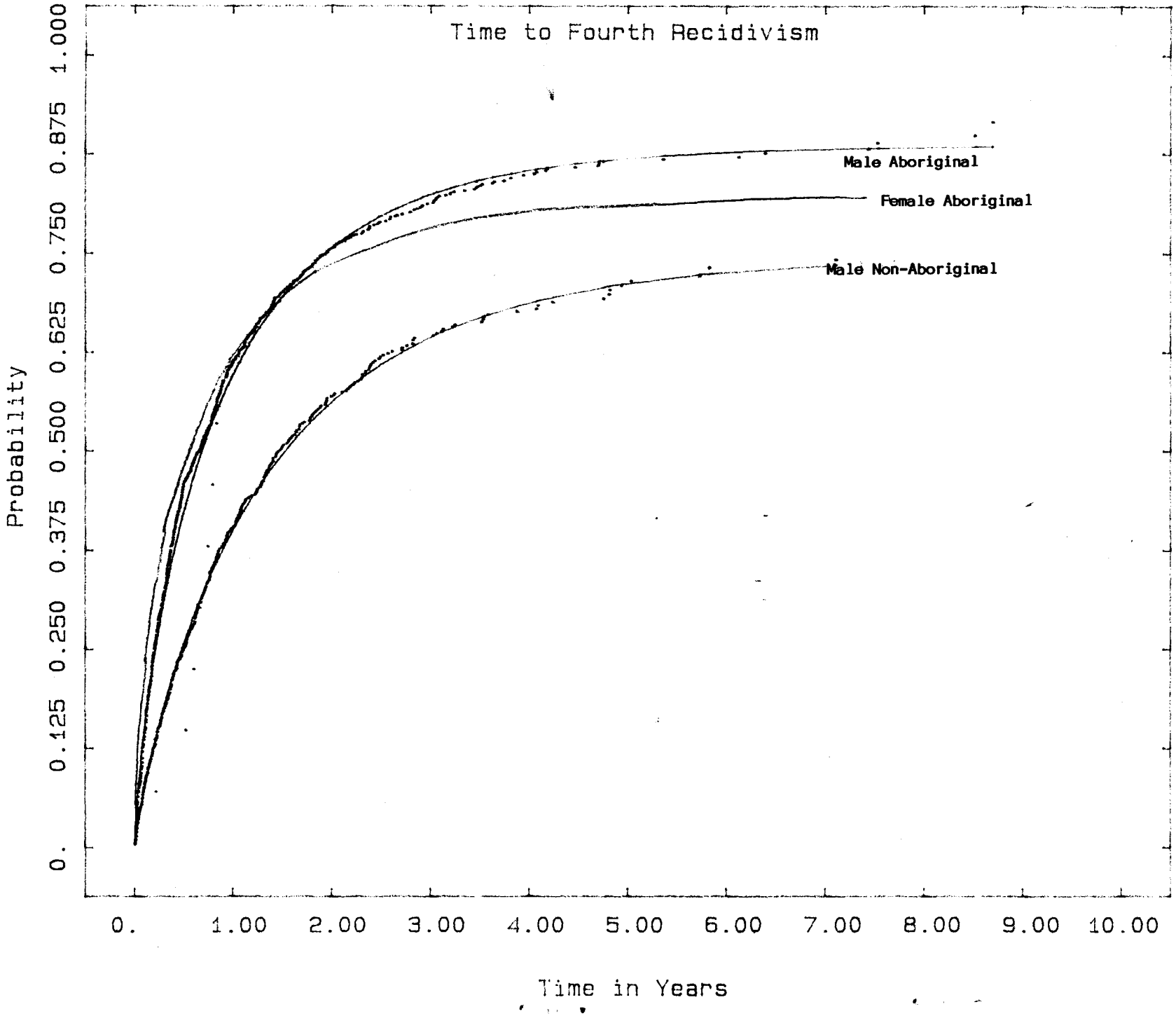
Time to Fourth Recidivism
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 4

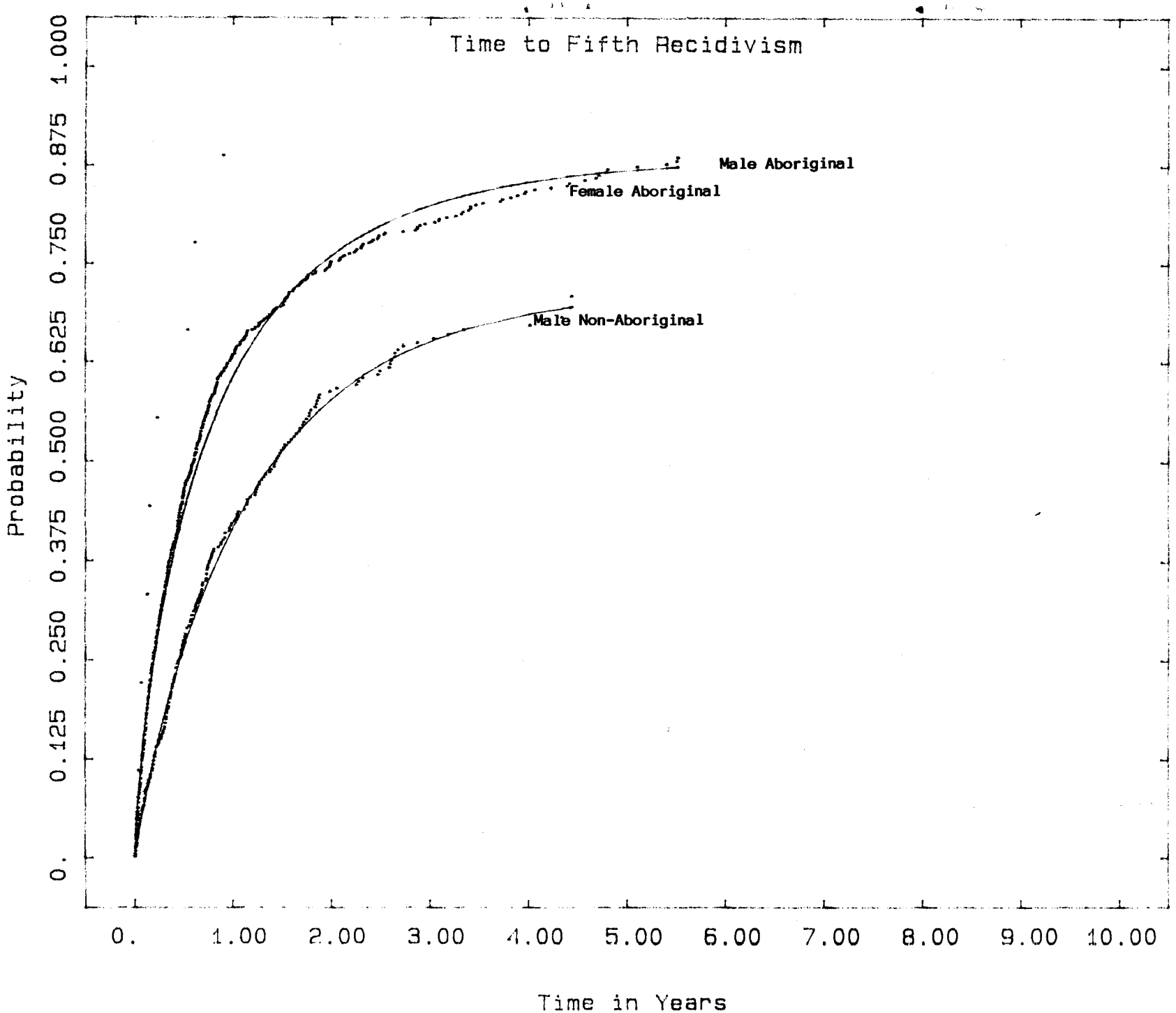
Time to Fifth Recidivism
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 5

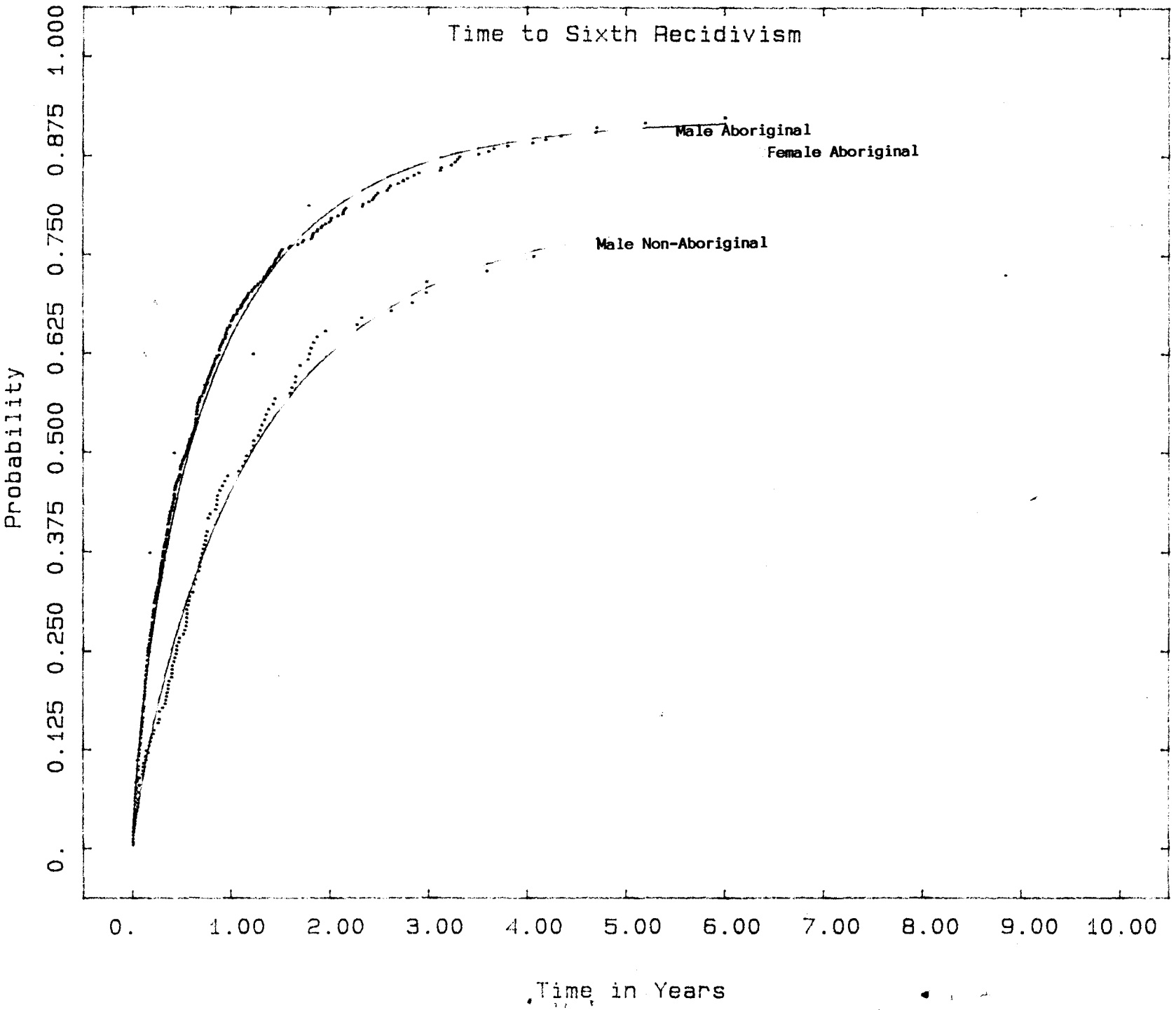
Time to Sixth Recidivism
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 6

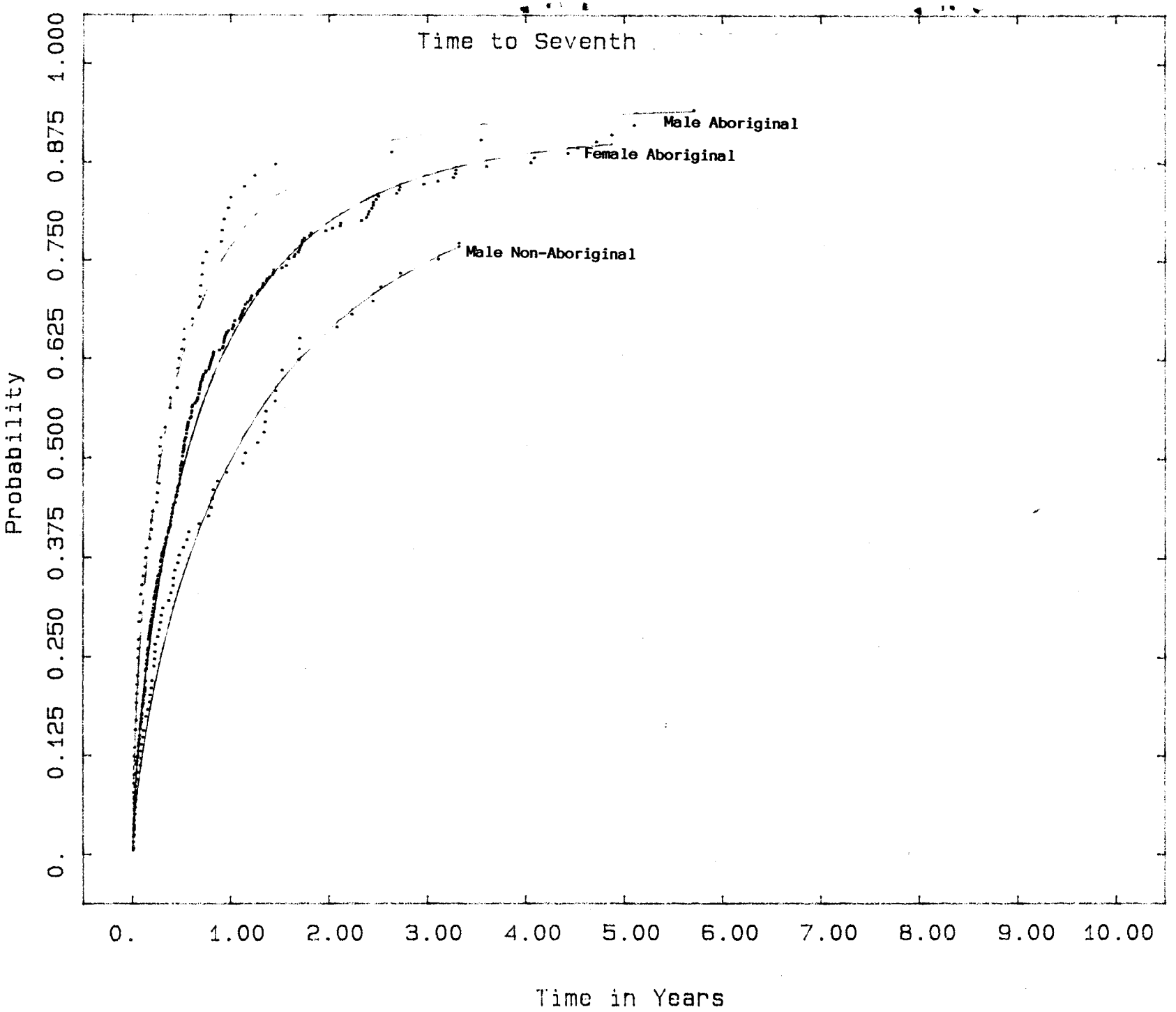
Time to Seventh
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 7

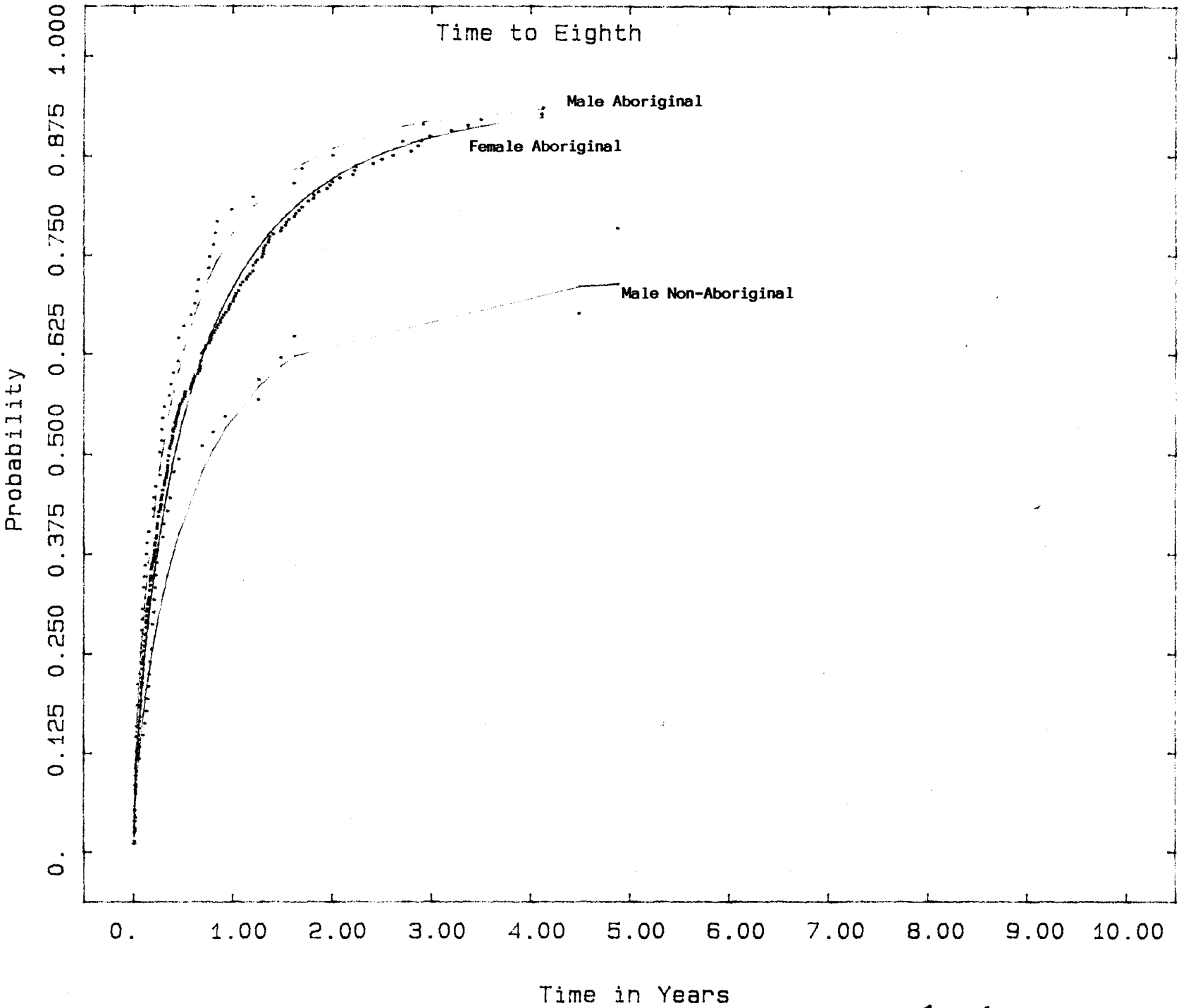
Time to Eighth
Male Aboriginal
Female Aboriginal
Male Non-Aboriginal
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 8

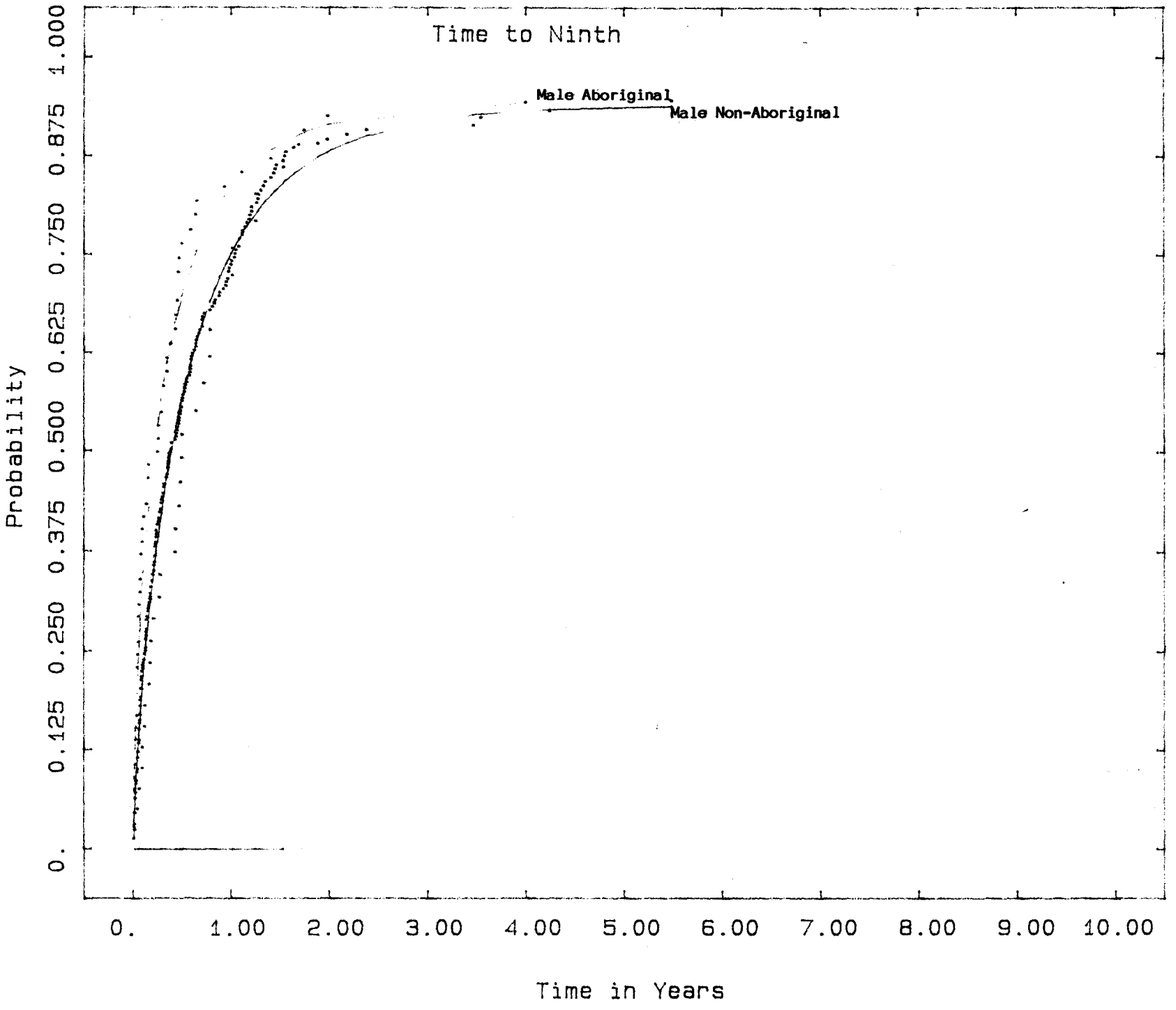
Time to Ninth
Male Aboriginal
Male Non-Aboriginal
Probability
0.
0.125
0.250
0.375
0.500
0.625
0.750
0.875
1.000
0.
1.00
2.00
3.00
4.00
5.00
6.00
7.00
8.00
9.00
10.00
Time in Years

Figure 9

364.309941
f
MAL
1
MALLER, R.A.
Careers of institutionalised ...

g 592
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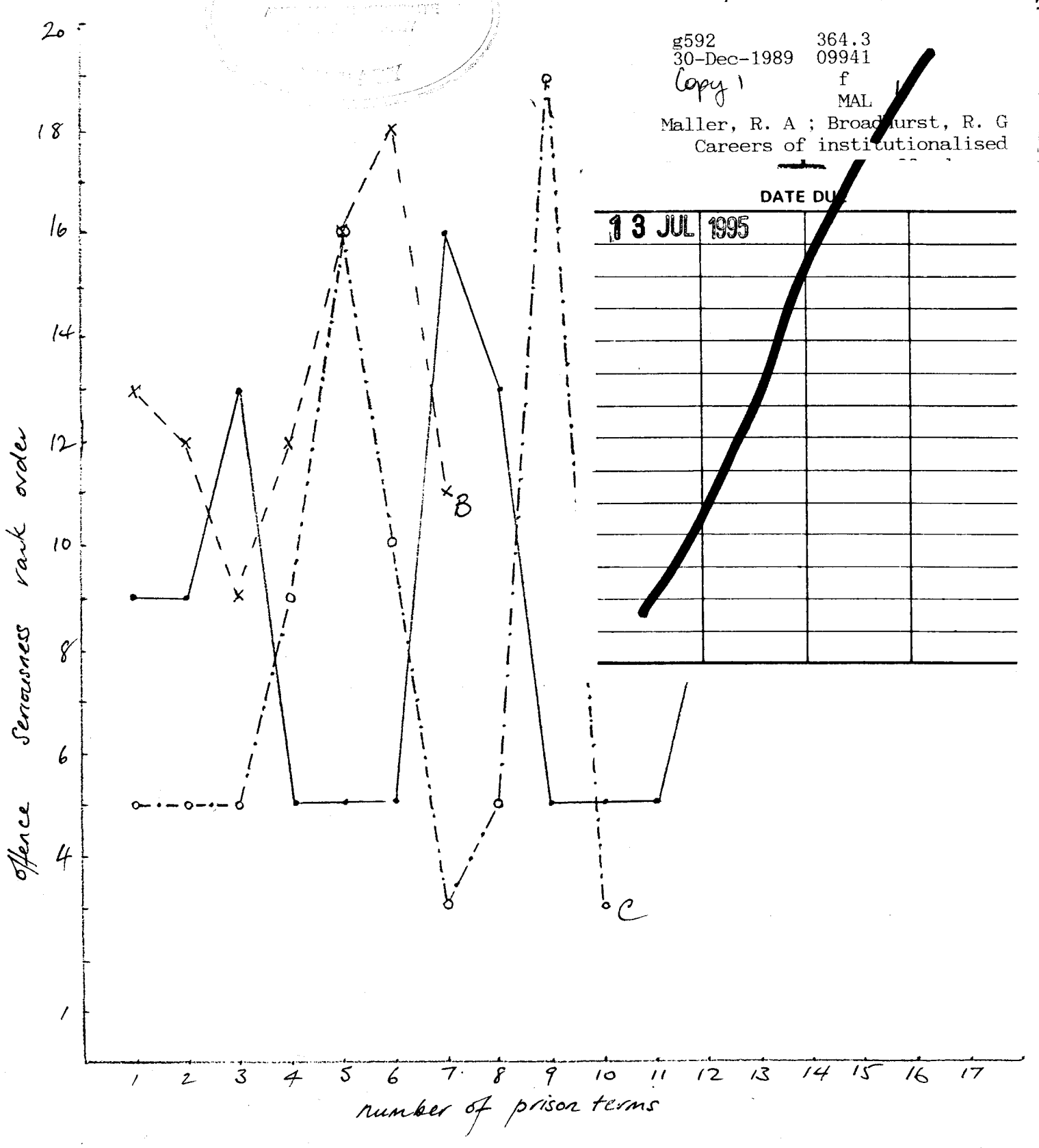
8 - Dec - 92

FIGURE 10 Examples of individual's records by the 20 point seriousness code

AUST INST OF CRIMINOLOGY
MON11199



g592 364.3
30-Dec-1989 09941
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MAL
Maller, R. A ; Broadhurst, R. G
Careers of institutionalised

DATE DU
13 JUL 1995