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The transition from juvenile to adult criminal careers

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Compared with the United States and Britain, Australia has conducted comparatively little research into juvenile re-offending and none (as far as can be determined) into the transition between juvenile and adult offending. The present bulletin presents the findings from a preliminary study into factors that affect the rate of juvenile offending and the proportion of juveniles whose criminal careers stretch into adulthood. Contrary to previously published research, we find a high proportion of juveniles making their first appearance in a Children's Court continue their offending into adulthood, particularly if their first court appearance occurred when they were young. The implications of this finding for juvenile justice policy are discussed.

INTRODUCTION

The recidivism rate of juvenile offenders is an issue of critical importance to policy. If most juvenile offenders do not reoffend after their first court appearance, it would seem sensible to focus prevention and rehabilitation resources on juveniles who have an established history of involvement in crime. If, on the other hand, one appearance in court indicates that further offending is highly likely, we should begin trying to reduce the risk of reoffending at the first point of contact between a juvenile and the court system. Overseas studies have found that between 30 and 60 per cent of juvenile delinquents, apprehended by police or brought before the Children's Court, later come into contact with the adult criminal justice system (Blumstein, Cohen, Roth & Visher 1986). The proportion of juvenile offenders in Australia who progress to adult offending is less clear. Research on this issue has been hampered by the inability of most State and Territory Governments to track the progression of offenders from juvenile to adult criminal courts.

In one of the few Australian studies of juvenile reoffending, Coumarelos (1994) tracked a cohort of 33,900 juveniles who had their first Children's Court appearance between 1982 and 1986. Coumarelos reported that 69.7 per cent of the juvenile offenders she studied did not reappear in the Children's Court following their first court appearance. This pattern of apparent desistance among juvenile offenders has underpinned a long-standing policy of trying to minimise the intensity of criminal justice intervention among juvenile offenders in New South Wales. For example, section 7 of the New South Wales *Young Offenders Act 1997* requires inter alia that 'the least restrictive form of sanction [be] applied against a child who is alleged to have committed an offence'. The Act also creates a graded system of intervention for young offenders, beginning with a police warning and then moving to formal cautioning, youth justice conferencing and finally the Children's Court. The system is predicated on the assumption that more onerous forms of intervention are only appropriate where a juvenile offender has committed a serious offence or has a history of failing to respond to less onerous forms of intervention.

At the time Coumarelos conducted her study, it was not possible to track the criminal careers of juvenile offenders into adulthood. It is entirely possible, then, that many of those who did not reappear in the Children's Court in her study, later reappeared in an adult court. It is also worth noting that juveniles in the younger age groups (10, 11 and 12 years) were under-represented in the Coumarelos cohort. Past research suggests that those who first appear in court when they are young are more likely to reoffend than those who first appear in court when they are in their late teenage years (Blumstein, Farrington & Moitra 1985). It is possible, then, that the true rate of juvenile reoffending is higher than Coumarelos's data suggested. Decisions about whether and when to intervene to reduce the likelihood of juvenile offending depend on the assumed likelihood of recidivism in the absence of intervention. Juvenile justice

policy would clearly be assisted if we knew more about the proportion and characteristics of juvenile offenders whose criminal careers extend into adulthood.

THE PRESENT STUDY

The present study investigates the reoffending behaviour of a cohort of 5,476 juveniles aged 10 to 18, who appeared in the New South Wales Children's Court for the first time in 1995.[1] We follow the criminal history of these young offenders for a period of approximately eight years, from their first appearance in 1995 to 31 December 2003. In addition to determining what proportion of them go on to appear in an adult court, we make a preliminary assessment of who is most at risk of making the transition from juvenile to adult offending. The assessment is preliminary because we are limited in our selection of risk factors (covariates) by the information about offenders routinely collected by the courts. The courts routinely collect information about an offender's gender, age of first conviction, offence and Indigenous status, all of which have been shown in past research to be correlated with recidivism. Unfortunately, courts do not collect information about a wide range of other factors correlated with juvenile recidivism (see Baker 1998; Buikhuisen 1988; Lynch, Buckman & Krenske 2003).

Three types of analysis were undertaken in relation to the above-mentioned risk factors. Negative binomial regression was used to see how these risk factors influence the number of court appearances between 1995 and 2003 (considering both juvenile and adult jurisdictions). Logistic regression analysis was used to determine how those same risk factors influence the likelihood of appearance in an adult court and the likelihood of receiving an adult prison sentence. Finally, Cox regression analysis was undertaken to determine how the risk factors influence the time between the first Children's Court appearance and the second court appearance (whether in a juvenile or adult jurisdiction) amongst those who had more than one court appearance.

Except where otherwise indicated, the covariates examined in each of these analyses were age at first court appearance, gender, Indigenous status and the principal offence at first court appearance.

RESULTS

FREQUENCY OF REAPPEARANCE IN COURT: BIVARIATE COMPARISONS

Sixty-eight per cent of those who appeared for the first time in a Children's Court in 1995 reappeared at least once in a criminal court (juvenile or adult) by the end of 2003. Table 1 presents data showing how court reappearances among the cohort of juvenile defendants under study varied in relation to age at first court appearance, Indigenous status, gender, and principal offence. The table shows the average number of court reappearances for members of each subgroup.

Significantly higher average rates of reappearance in court are evident among: those whose first court appearance occurred when they were relatively young, Indigenous defendants and males. Unlike previously reported findings (Coumarelos 1994, p.17), the impact of initial offence type in this analysis is indistinct. While the nature of the first offence does demonstrate a significant effect on the number reappearances, the difference seems to be that people appearing for something other than property or violent crime are less likely to reappear. Juveniles who first appeared for either a violent or property crime have a similar average number of reappearances.

FREQUENCY OF REAPPEARANCE IN COURT: MULTIVARIATE ANALYSES

Table 2 shows the results of fitting a negative binomial regression model to the frequency of reappearance in court, using age at first court appearance, Indigenous status and gender as covariates. There are significant effects for each of the covariates.

Table 1: Persons who first appeared in the Children's Court in 1995: Average number of court reappearances up to December 2003 by age, Indigenous status, gender and principal offence at first appearance

Juvenile characteristics	*Number of juveniles*	*Average number of reappearances per person*
Age at first court appearance		
10-14	1,241	5.2
15-16	2,371	3.4
17-18	1,864	2.4
Chi square test: p-value		*<.0001*
Indigenous status		
Non-Indigenous	4,783	2.8
Indigenous	693	8.3
Chi square test: p-value		*<.0001*
Gender		
Female	1,071	2.0
Male	4,405	3.8
Chi square test: p-value		*<.0001*
Principal offence at first appearance[2]		
Violent	826	3.5
Property	2,780	3.6
Other	1,870	3.2
Chi square test: p-value		*<.0001*
Total	**5,476**	**3.5**

Table 2: Negative binomial model for number of court reappearances within eight years for juveniles who appeared in the Children's Court for the first time in 1995

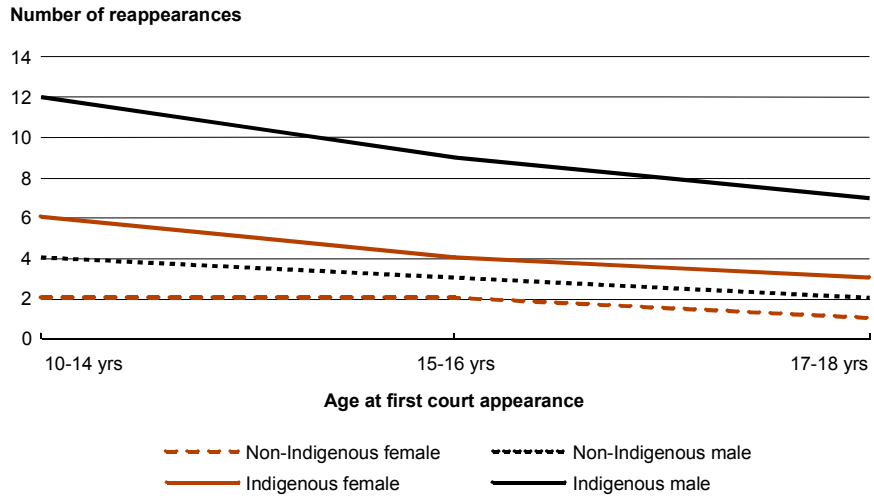
Juvenile characteristics	*Estimate*	*Standard error*	*Wald 95% confidence limts*		*Chi-square*	*Significance*	*Odds ratio*
Intercept	0.694	0.053	0.591	0.797	173.84	<.0001	
Male v. female	0.721	0.045	0.632	0.810	254.60	<.0001	2.056
Age 17-18 v. 10-14	-0.583	0.046	-0.673	-0.493	161.05	<.0001	0.558
Age 15-16 v. 10-14	-0.265	0.043	-0.349	-0.180	37.83	<.0001	0.767
Indigenous v. non-Indigenous	1.053	0.049	0.958	1.148	470.87	<.0001	2.867
Dispersion	1.209	0.034	1.144	1.278			

For details of the fit of the model to the data, see Appendix 1

The relative impact of the covariates on the number of criminal court appearances can be determined by comparing the odds ratios shown in Table 2. The number of reappearances for juveniles whose first court appearance occurred between the ages of 10 and 14 is about 23 per cent higher than that of juveniles whose first court appearance occurred between the ages of 15 and 16, and about 44 per cent higher than that of juveniles whose first court appearance occurred when they were 17 years or older. The rate of reappearance for Indigenous juveniles is about 187 per cent higher than that for the non-Indigenous juveniles in the sample. The rate of reappearance by males is twice that of females.

These differences are illustrated graphically in Figure 1. Inspection of the Figure indicates that the younger a juvenile is at his or her first court appearance, the more court appearances they will subsequently have. The expected number of court appearances in each age band is lowest for non-Indigenous females, highest for Indigenous males and intermediate for non-Indigenous males and Indigenous females. The reappearance pattern for Indigenous males, however, differs markedly from the other three groups. Indigenous males who first appear in the Children's Court aged between 10-14, for example, will have, on average, 12 subsequent court appearances over the next eight years. By comparison, non-Indigenous males appearing for the first time in the Children's Court at the same age will have, on average, only four subsequent appearances over the same period.

Figure 1: Juveniles first appearing in the Children's Court in 1995: Number of appearances within eight years predicted by negative binomial regression



PROBABILITY OF APPEARANCE IN AN ADULT COURT: BIVARIATE COMPARISONS

Forty-three per cent of those who appeared for the first time in the Children's Court in 1995 reappeared at least once in the Children's Court by the end of 2003. Over half (3,142 or 57%) of the total cohort had at least one subsequent appearance in an adult criminal court in this period. Of this group, almost a quarter (714 or 23%) received a custodial sentence in an adult court. Looked at another way, 13 per cent of the cohort of juveniles who appeared for the first time in a Children's Court in 1995 were imprisoned by an adult court within the next eight years.

Table 3 shows the proportion of defendants in each subgroup that went on to have at least one appearance in an adult court, as well as the proportion that received at least one prison sentence at a subsequent adult court appearance. The defendant's age at their first court appearance does not affect the likelihood of appearing in an adult court. Those whose first court appearance occurred when they were young, however, were significantly more likely to end up with a custodial sentence, as were males and Indigenous offenders.

As already noted, there is no clear relationship between the offence for which a juvenile first appears in court and the number of subsequent court appearances they have. Table 3 shows the nature of the first offence is unrelated to the *likelihood* of an adult court appearance. Table 3 also shows,

Table 3: Persons who first appeared in the Children's Court in 1995: proportion with at least one adult court appearance and adult custodial sentence within eight years by age, gender, Indigenous status and principal offence at first appearance

Juvenile characteristics	*Number of juveniles*	*% with at least one adult court appearance*	*% with at least one adult custodial appearance*
Age at first court appearance			
10-14	1,241	58.1	17.8
15-16	2,371	57.2	13.1
17-18	1,864	57.1	9.8
Chi square test: p-value		*0.8428*	*<.0001*
Indigenous status			
Non-Indigenous	4,783	52.6	9.7
Indigenous	693	90.5	36.1
Chi square test: p-value		*<.0001*	*<.0001*
Gender			
Female	1,071	38.4	4.9
Male	4,405	62.0	15.0
Chi square test: p-value		*<.0001*	*<.0001*
Principal offence at first appearance[2]			
Violent	826	59.6	14.4
Property	2,780	56.6	13.7
Other	1,870	57.6	11.5
Chi square test: p-value		*0.3059*	*0.0438*
Total	**5,476**	**57.4**	**13.0**

however, that juveniles whose first court appearance was for a violent offence were slightly (but significantly) more likely to end up receiving a custodial penalty in an adult court.

PROBABILITY OF APPEARANCE IN AN ADULT COURT: MULTIVARIATE ANALYSES

Table 4 shows the results of a logistic regression analysis in which the likelihood of appearance in an adult court has been jointly regressed against Indigenous status and gender. Table 5 shows the results of a similar analysis in which the dependent variable is the likelihood of appearing in an adult court *and* receiving a prison sentence. Note that in this second analysis we include the age of the defendant at the first court appearance because it was significant at the bivariate level (see Table 3).

Both contrasts shown in Table 5 are highly significant. While there is a strong effect for both Indigenous status and gender, the effect of Indigenous status on the subsequent risk of an adult court appearance is particularly strong. The odds of an Indigenous juvenile defendant appearing in an adult court within eight years of his or her first court appearance are more than nine times higher than those for a non-Indigenous defendant. We can see the effect of Indigenous status more clearly by using the odds ratios in Table 4 to estimate relative risks and graphing the result (see Figure 2).

Table 4: Logistic regression model for the probability of a juvenile who appeared in the Children's Court for the first time in 1995 appearing in an adult court within eight years

		95% Confidence Interval		
Juvenile characteristics	*Odds Ratio*	*Lower*	*Upper*	*Significance*
Indigenous v. non-Indigenous	9.367	7.191	12.202	<.0001
Male v. female	2.884	2.492	3.337	<.0001

It is obvious from Figure 2 that the likelihood of a juvenile offender appearing in an adult court is higher for males than for females and higher for Indigenous juveniles than for non-Indigenous juveniles. What stands out about Figure 2, however, is that an Indigenous male who appears even once in the Children's Court is almost certain to appear in an adult court within eight years of his first appearance. The likelihood of appearance in an adult court by a female Indigenous offender is also very high.

As can be seen from Table 5, the probability of receiving a prison sentence from an adult court within eight years of their first Children's Court appearance was significantly greater for juveniles aged 10-14 at their first court appearance compared with juveniles who made their first appearance at age 17-18. However, no significant difference existed between juveniles

making their first appearance between the ages of 10 and 14 and juveniles making their first appearance between the ages of 15 and 16. Indigenous defendants and males are much more likely to find themselves in an adult court facing a prison sentence than non-Indigenous offenders and females. The relative strength of each of the variables is again best seen by converting the odds ratios to measures of relative risk.

Figure 3 shows the results of this conversion. For non-Indigenous females the age of first court appearance appears to have little effect on the likelihood of subsequently appearing in an adult court and receiving a prison sentence. For non-Indigenous males and Indigenous females, the risk of subsequent imprisonment by an adult court is weakly but inversely related to the age of first court appearance. The age effect is most apparent for Indigenous males, with a substantial decline in the probability of reappearing in an adult court and receiving a custodial sentence as the age of first court appearance increases from 15-16 years to 17-18 years.

PROBABILITY OF APPEARANCE IN AN ADULT COURT: THE INFLUENCE OF JUVENILE CRIMINAL HISTORY

Past research suggests that the probabilities of appearance in an adult court and receiving a prison sentence from an adult court are likely to be affected by the amount of contact a juvenile has with the juvenile justice system (Blumstein, Cohen, Roth & Visher 1986). To see whether this is true in an Australian context we need to choose a sub-sample of juveniles, all of who have had the same opportunity to reoffend and reappear in the Children's Court. In what follows, therefore, we restrict our attention to a sample of juveniles who were aged 16 at the time of their first Children's Court appearance.

A total of 1,311 juveniles were aged 16 at the time of their first Children's Court appearance in 1995. Fifty-seven per cent of these juveniles appeared at least once in an adult court, while 12 per cent received at least one custodial sentence following their adult court appearance.

Figure 2: Probability that a juvenile who appeared in the Children's Court for the first time in 1995 will appear in an adult court within eight years

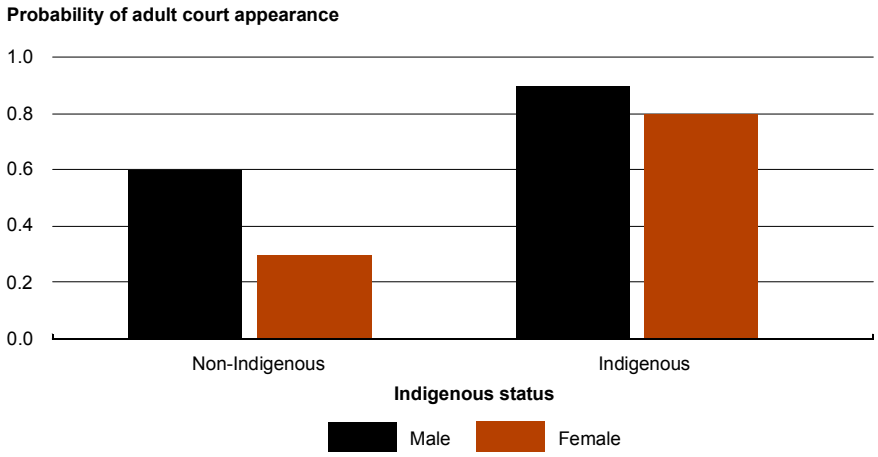
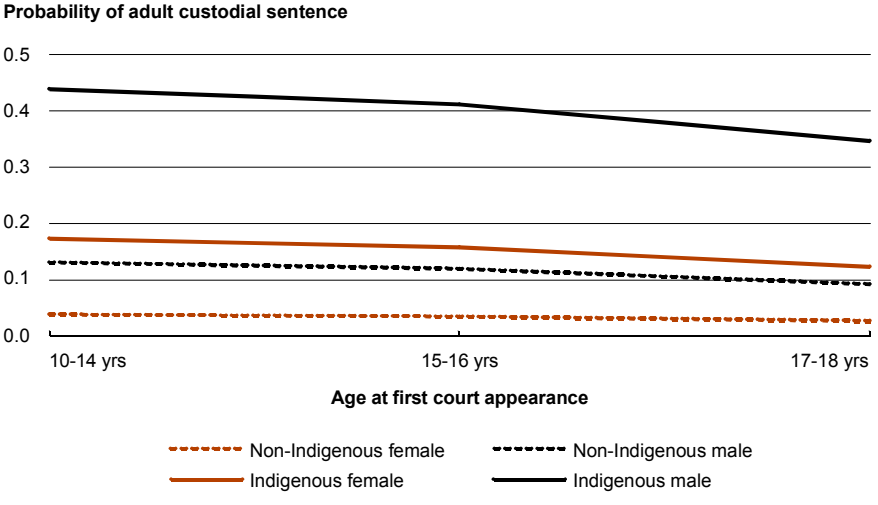


Table 5: Logistic regression model for the probability of a juvenile who appeared in the Children's Court for the first time in 1995 receiving a custodial sentence in an adult court within eight years

		95% confidence interval		
Juvenile characteristics	***Odds ratio***	***Lower***	***Upper***	***Significance***
15-16 years v. 10-14 years	0.896	0.732	1.096	0.2840
17-18 years v. 10-14 years	0.678	0.541	0.849	0.0007
Indigenous v. non-Indigenous	5.161	4.265	6.245	<.0001
Male v. female	3.786	2.811	5.099	<.0001

Figure 3: Probability that a juvenile who appeared in the Childrens Court for the first time in 1995 will receive an adult custodial sentence within eight years



These results are reassuringly similar to those of the overall sample. Table 6 shows the bivariate relationship between various risk factors and the likelihood of (a) an adult court appearance and (b) imprisonment following an adult court appearance. Consistent with the results from previous analyses, Indigenous and male offenders were more likely to appear in an adult court and to receive a prison sentence in an adult court. It is evident that juveniles who received a custodial sentence from a Children's Court, or who had multiple Children's Court appearances, were both more likely to appear in an adult court and more likely to end up receiving a prison sentence following their appearance in an adult court.

Table 6: Juveniles who first appeared in the Children's Court in 1995 at age 16 years: proportion with an adult court appearance and an adult custodial sentence within eight years by gender, Indigenous status and experience in the Children's Court

Juvenile characteristics	*Number of juveniles*	*% appearing at least once in an adult court*	*% receiving at least one custodial sentence in an adult court*
Indigenous status			
Non-Indigenous	1,179	53.1	9.5
Indigenous	132	93.2	33.3
Chi square test: p-value		*<.0001*	*<.0001*
Gender			
Female	266	36.1	4.9
Male	1,045	62.5	13.7
Chi square test: p-value		*<.0001*	*<.0001*
Reappearances in Children's Court			
None	736	44.2	4.8
One	297	63.6	12.5
Two or more	278	84.5	30.2
Chi square test: p-value		*<.0001*	*<.0001*
Custodial sentence in Children's Court			
None	1,233	55.88	10.3
One or more	78	76.92	37.2
Chi square test: p-value		*0.0003*	*<.0001*
Total	**1,311**	**57.1**	**11.9**

Table 7: Logistic regression model for the probability of a juvenile who appeared in the Children's Court for the first time in 1995 at age 16 appearing in an adult court within eight years

		95% confidence interval		
Juvenile characteristics	*Odds ratio*	*Lower*	*Upper*	*Significance*
Indigenous status				
Indigenous v. non-Indigenous	11.679	5.723	23.833	<.0001
Gender				
Male v. female	3.012	2.206	4.114	<.0001
Reappearances in Children's Court				
One v. none	1.957	1.463	2.619	<.0001
Two or more v. none	5.769	3.992	8.338	<.0001

It is possible that the effects of multiple Children's Court appearances and/or a custodial penalty are confounded with the effects of Indigenous status and/or gender. To see whether this is true we conduct two further regressions. The first regresses the likelihood of an adult court appearance against Indigenous status, gender and the number of Children's Court appearances. The second regresses the likelihood of a prison sentence against these same variables. Note that the variable measuring whether a juvenile received a custodial sentence from a Children's Court was not included in these analyses because it was too highly correlated with the number of Children's Court appearances.

Table 7 shows the results of the logistic regression for the probability of appearance in an adult court for juveniles aged 16 at the time of their first Children's Court appearance.

All contrasts in the model are significant but the most powerful effects are those associated with Indigenous status and the number of Children's Court appearances.

Figure 4 converts the odds ratios in Table 7 to relative risks in order to illustrate the incremental effect that multiple Children's Court appearances have on the probability of appearance in an adult court. It is evident that, for non-Indigenous offenders, the likelihood of appearance in an adult court increases sharply with the number of juvenile court appearances. Non-Indigenous male juveniles who have only one Children's Court appearance stand about a 47 per cent chance of appearing in an adult court. Those who have appeared in the Children's Court three or more times stand about an 84 per cent chance of turning up in an adult court. The effects of multiple Children's Court appearances are far more attenuated for Indigenous juvenile offenders. However this is only because the risk of an Indigenous juvenile appearing in an adult court after the first court appearance is so high there is little scope for multiple court appearances to further inflate this risk.

Table 8 presents the results of regressing the probability of an adult prison sentence against the same group

Figure 4: Probability that a juvenile appearing in the Children's Court for the first time in 1995 at age 16 will have an adult court appearance within eight years

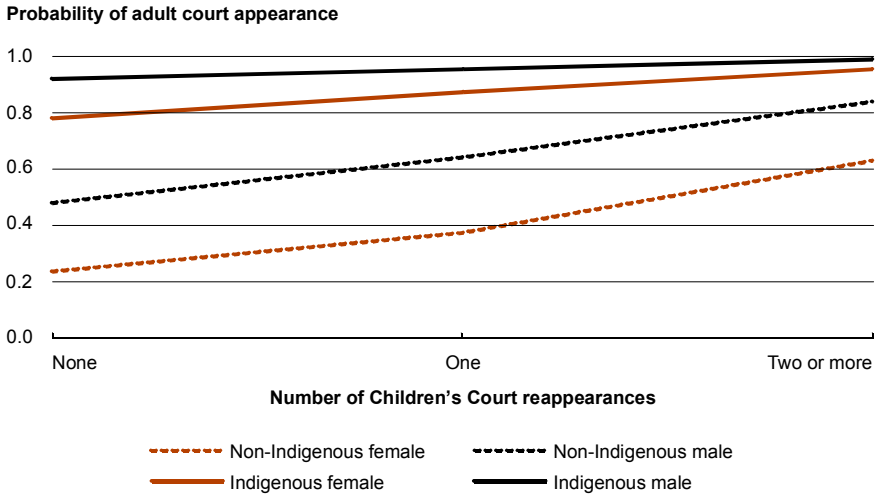
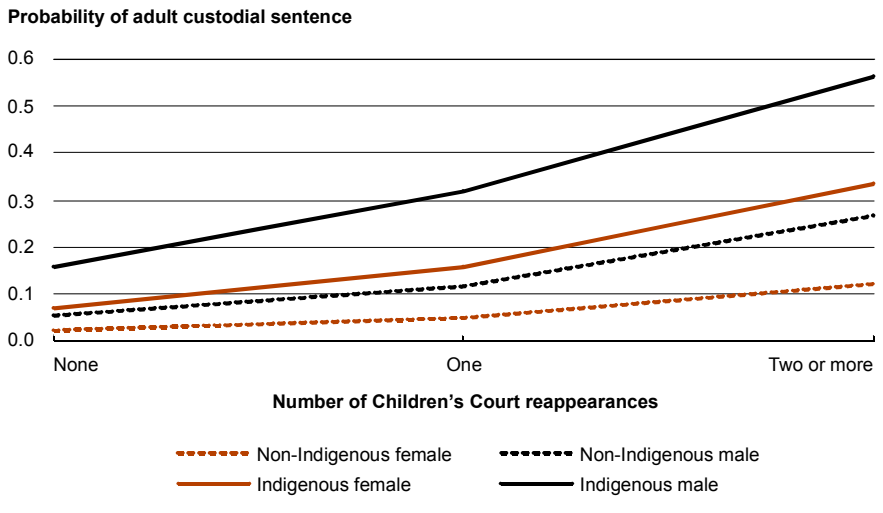


Table 8: Logistic regression model for probability of a juvenile who appeared in the Children's Court for the first time in 1995 at age 16 receiving at least one custodial sentence in an adult court within eight years

		95% confidence interval		
Juvenile characteristics	***Odds ratio***	***Lower***	***Upper***	***Significance***
Indigenous status				
Indigenous v. non-Indigenous	3.630	2.321	5.677	<.0001
Gender				
Male v. female	2.579	1.400	4.753	0.0024
Reappearances in Children's Court				
One v. none	2.486	1.520	4.067	0.0003
Two or more v. none	6.872	4.441	10.632	<.0001

Figure 5: Probability that a juvenile appearing in the Children's Court for the first time in 1995 at age 16 will have received an adult custodial sentence within eight years



of variables. Again, all contrasts are significant. Figure 5 shows how the relative risk of adult imprisonment changes with the number of Children's Court appearances.

Here there is no ceiling effect. The risk of ending up with a prison sentence in an adult court increases for all groups, although the change is most apparent for Indigenous males and least apparent for non-Indigenous females. An Indigenous male juvenile who has his first court appearance at age 16 but who only appears once in the Children's Court faces a 16 per cent risk of later being imprisoned by an adult court. The corresponding probability for an Indigenous male juvenile with three or more Children's Court appearances is 57 per cent – a difference of 41 percentage points. The risk of adult imprisonment also increases with the number of Children's Court appearances by Indigenous females and non-Indigenous persons (whether male or female). The changes, however, are less pronounced. For example, while two per cent of non-Indigenous females who appear once in the Children's Court go on to receive a prison sentence as an adult, this figure only rises to 12 per cent for non-Indigenous females who have three or more Children's Court appearances.

TIME TO SECOND COURT APPEARANCE

In this section we examine the time from the first to the second court appearance (whether in a juvenile or an adult criminal court). Because juveniles who are in custody cannot offend, the analysis includes only those who *did not* receive a custodial sentence at their first court appearance. This group comprises 98.8 per cent of the overall sample.

For those who had at least two court appearances, the average time from the first to the second court appearance was 651 days (i.e. 21 months). Table 9 provides the results of the Cox proportional hazard regression model that was used to fit data on time to first reappearance. The model shows significant effects for age at first court appearance, Indigenous status, gender and principal offence. The time to first

Table 9: Proportional hazards model for time from first Children's Court appearance to second court appearance

		95% confidence interval		
Juvenile characteristics	*Hazard ratio*	*Lower*	*Upper*	*p-value*
Age at first court appearance				
15-16 v. 10-14	0.9435	0.8698	1.0234	0.1609
17-18 v. 10-14	0.7498	0.6860	0.8196	<.0001
Indigenous status				
Indigenous v. non-Indigenous	2.7005	2.4751	2.9464	<.0001
Gender				
Male v. female	1.8000	1.6428	1.9723	<.0001
Principal offence at first court reappearances				
Property v. violent	0.8950	0.8149	0.9830	0.0205
Other v. violent	0.8947	0.8103	0.9879	0.0278

Figure 6: Survival function based on time to second court appearance for juveniles who first appeared in the Children's Court in 1995, by age at first appearance

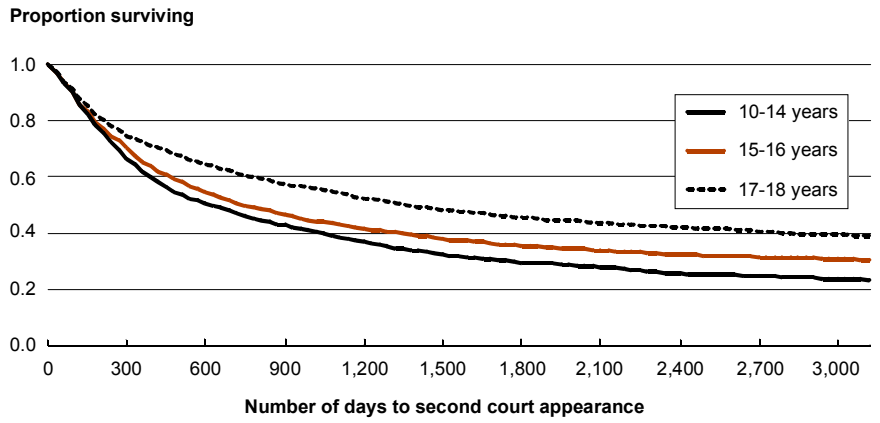
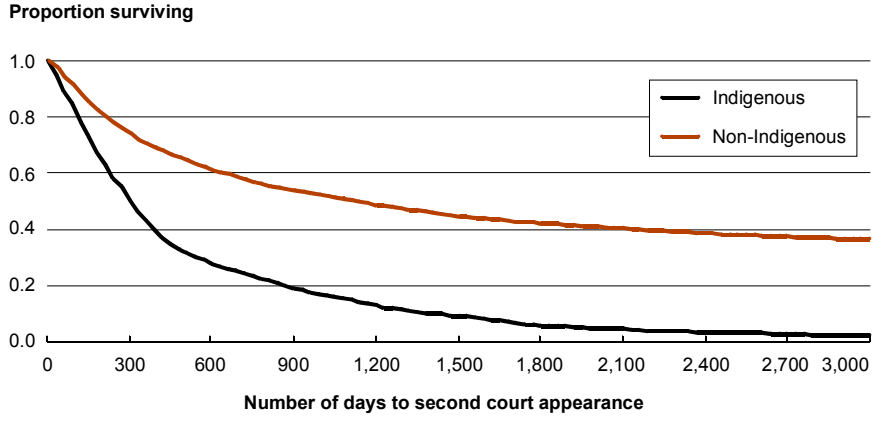


Figure 7: Survival function based on time to second court appearance for juveniles who first appeared in the Children's Court in 1995, by Indigenous status



reappearance is less when the juvenile is aged 10-14 at their first Children's Court appearance; when they are Indigenous; when they are male and when their principal offence was violence-related.

The figures that follow show the plotted Kaplan-Meier survival functions for the measures examined: age at first court appearance, gender, Indigenous status and principal offence at first appearance. The survival function shows the proportion of the sample 'surviving' over time - represented as the proportion of the sample *not* reappearing for a second court appearance, plotted against the number of days in the follow-up period (around eight years).

Time to second court appearance by age

Figure 6 shows the survival time to the second court appearance on the basis of age at first court appearance. The log-rank test of equality of the survival functions of the three age groups was highly significant at p<0.0001, indicating a difference between them in relation to the time to first reappearance. Those whose first court appearance occurred when they were in the age group 17-18 survived the longest. Those whose first court appearance occurred when they were in the age group 10-14 reoffended most quickly. At the 500-day (1.4 year) mark, for example, 68 per cent of the 17-18 group had not reappeared in a court, compared with 59 per cent of the 15-16 age group and 54 per cent of the 10-14 age group. The mean time to the second court appearance was 1,751 days (4.8 years) for the 17-18 age group; 1,429 days (3.9 years) for the 15-16 age group and 1,256 days (3.4 years) for the 10-14 age group.

Time to second court appearance by Indigenous status

Figure 7 shows the survival time to second court appearance on the basis of Indigenous status. Again, the log-rank test of equality of the survival functions was highly significant at p<0.0001, with the time to first reappearance being longer for the non-Indigenous group than for the Indigenous group. For example, at the 500 day (1.4 year) mark, 65 per cent

Figure 8: Survival function based on time to second court appearance for juveniles who first appeared in the Children's Court in 1995, by gender

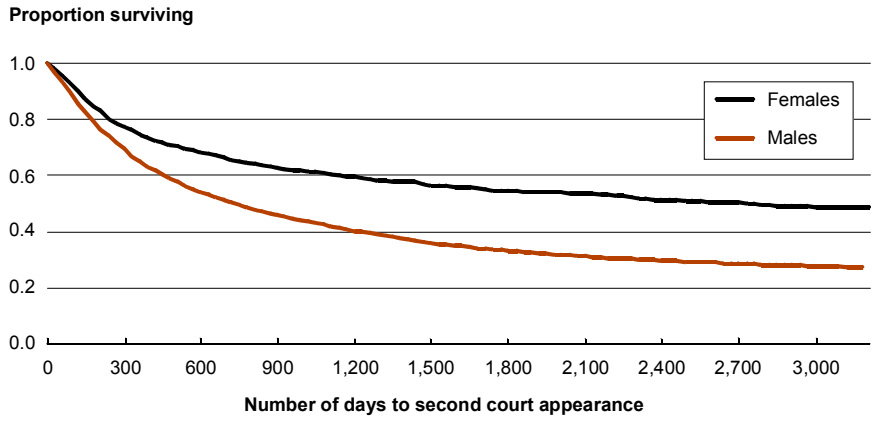
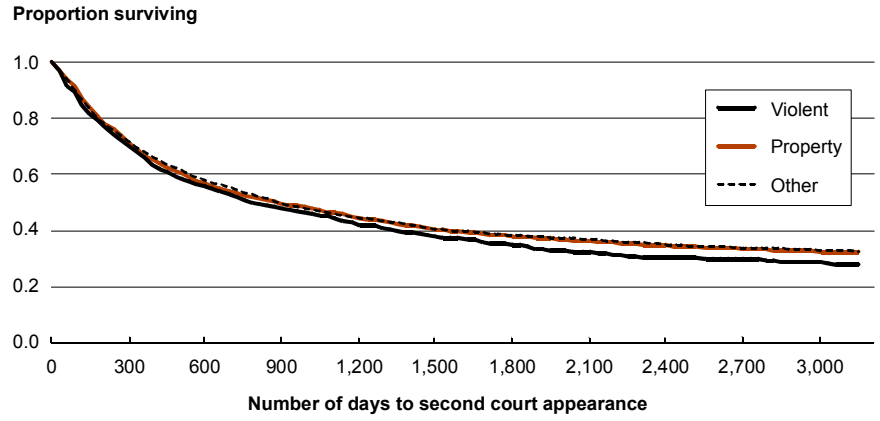


Figure 9: Survival function based on time to second court appearance for juveniles who first appeared in the Children's Court in 1995, by principal offence at first court appearance



of the non-Indigenous group had not reappeared in court, compared with only 32 per cent of the Indigenous group. The mean number of days between the first and second court appearance was 1,624 (4.4 years) for the non-Indigenous group, but only 545 (1.5 years) for the Indigenous group.

Time to second court appearance by gender

Figure 8 shows the survival time to second court appearance on the basis of gender. The log-rank tests of equality of the survival functions were again highly significant at $p<0.0001$, with the time to first reappearance being significantly longer for the females than for males. For example, at the 500 day (1.4 year) mark, 71 per cent of females had not reappeared before a court compared with 58 per cent of males. The mean time to the second court appearance was 1,976 days (5.4 years) for females and 1,370 days (3.8 years) for males.

Time to second court appearance by principal offence

Figure 9 shows the survival time to first reappearance on the basis of principal offence at the first court appearance. The time to second court appearance is remarkably similar across the three offence categories and this is borne out by the results of the log-rank tests of equality of the survival functions, which are not statistically significant ($p=0.1132$). The mean number of days between the first and second appearance for the violent offence group was 1,413 days (3.9 years), 1,493 days (4.1 years) for the property offence group and 1,511 days (4.1 years) for the 'other' offence category.

SUMMARY AND DISCUSSION

The purpose of this study was to build on past research conducted by Coumarelos (1994) and to extend our understanding of the relationship between juvenile and adult criminal careers. To this end, we identified a cohort of 5,476 juveniles who appeared in the Children's Court for the first time in 1995 and examined their criminal histories over the eight-year period from 1995 to 2003. The principal objective of the analysis was to determine:

1. How many times, on average, members of the cohort reappeared in court
2. What proportion of the cohort went on to appear in an adult court
3. What proportion went on to receive a prison sentence from an adult court
4. How long, on average, it took members of the cohort to reappear in court

In addition, we sought to determine how the quantities referred to in (1) to (4) vary according to factors such as the age of a juvenile at his or her first court appearance, their Indigenous status, their gender and the offence for which they first appeared in court.

The main findings of the study are as follows. Sixty eight per cent of those who appeared in the Children's Court for the first time in 1995 had reappeared in a NSW criminal court at least once within the next eight years. Forty-three per cent of the cohort reappeared at least once in the Children's Court and 57 per cent had at least one appearance in an adult court over this period. Twenty-three per cent of those that had an adult court appearance (or 13 per cent of the total sample) received an adult prison sentence at some stage during the eight-year follow-up period. In other words, 13 per cent of those who appeared for the first

time in a Children's Court, in 1995, ended up in an adult prison within eight years. The number of reappearances in court was found to be significantly related to the age at which the juvenile first appeared in court; with youths aged 10 to 14 at their first appearance having significantly more court appearances over eight years than youths who were aged over 14 at their first appearance. While the study found that the risk of appearing in an adult court was not influenced by the age at first Children's Court appearance, this is likely to be because those who first appeared in court when they were young have had less opportunity to appear in an adult court than those whose first Children's Court appearance occurred when they were in their late teenage years. Males and Indigenous juveniles were more likely to appear in an adult court than females and/or non-Indigenous defendants. The risk of receiving a prison sentence from an adult court was higher for: male defendants, Indigenous defendants, defendants whose first court appearance occurred with they were young and defendants who appeared in the Children's Court a number of times before appearing in an adult court.

Members of the cohort accumulated an average of 3.5 court appearances (considering both juvenile and adult jurisdictions) over the eight-year follow-up period. The rate of reappearance in court was found to be unrelated to the principal offence at first court appearance but strongly influenced by a number of other factors. Court appearance rates were significantly higher for males, Indigenous defendants and those whose first court appearance occurred when they were relatively young. Rates of court appearance among Indigenous defendants who made their first court appearance when they were young were particularly high. Indigenous males aged between 10 and 14 at their first court appearance, for example, accumulated an average of 12 court appearances over the ensuing eight years.

Among those who had at least two court appearances, the average time between first and second court appearance was about 21 months. The principal offence at the time of the first court appearance exerted no effect on the time between the first and second court appearance. As might be expected, however, males, Indigenous defendants and those whose first court appearance occurred when they were young generally reappeared much sooner than females, non-Indigenous defendants and those whose first juvenile court appearance occurred when they were older. Once again, the effects of Indigenous status were especially pronounced. The average period between the first and second court appearance for non-Indigenous defendants, for example, was 4.4 years. The corresponding period for Indigenous defendants was just 1.5 years.

The most surprising finding to come out of the present research is the discovery that most juveniles appearing in court reoffend. Nearly 70 per cent of the 5,476 juveniles examined in the present study reappeared in court within eight years. These results are fairly consistent with the international literature on juvenile offending (Blumstein, Cohen, Roth & Visher 1986), however they seem to conflict with Coumarelos's finding that only about 30 per cent of juveniles appearing in the NSW Children's Court between 1982 and 1986 had more than one juvenile court appearance. One obvious reason for the apparent discrepancy, mentioned earlier, is that Coumarelos was only able to track her sample to the end of their juvenile criminal career, whereas we tracked our cohort into the adult criminal domain. It should be remembered, however, that nearly 43 per cent of our sample had at least one further appearance *in a Children's Court* within eight years of their first appearance in that jurisdiction. The difference between the two studies in measured rates of reoffending cannot therefore be attributed simply to the longer follow-up period.

It is possible that juvenile offenders are more inclined to reoffend now than they were when Coumarelos conducted her study. A more plausible explanation for the higher measured rate of recidivism in our study, however, is that it is an artefact of differences in the methods by which juveniles were selected for inclusion in the two studies.[4] The current study tracked the criminal history of every juvenile who made their first appearance in the Children's Court in 1995 over a period of eight years. To be included in Coumarelos's study, on the other hand, a juvenile had to (a) have been convicted of one or more criminal charges in the NSW Children's Court between the beginning of 1982 and the end of 1986 *and* (b) have reached the age of 18 by the end of the study period (June 1992). Condition (b) would have resulted in the systematic exclusion of juveniles who had the first court appearance at a relatively young age (e.g. 10-12) but who appeared in court close to 1986.[5] As we have already seen, these offenders have a high risk of recidivism. The selection criteria used in the Coumarelos study, in other words, almost certainly resulted in an underestimate of the true rate of recidivism.

One important policy implication of the current findings is that efforts to reduce the risk of reoffending should not to be delayed in the belief that most young people making their first appearance in the Children's Court will never reappear in court again. This is particularly true where the defendant in question is Indigenous, male and/or relatively young. Of course, there is no point in intervention for its own sake—the intervention programs we employ have to be effective in reducing the risk of reoffending. Unfortunately, very few Australian criminal justice programs have been rigorously evaluated, so it is difficult to point to interventions that can be relied upon to reduce the rate of reoffending. Decisions about what policies to adopt to reduce the risk of juvenile reoffending therefore have to be guided, in the main, by the results of overseas research into what reduces the risk of reoffending.

In her review of the relevant literature, MacKenzie (2002) cites a number of programs that have been shown **not** to work, at least in an American context. These include:

- Specific deterrence interventions, such as shock probation and 'scared straight';

- Rehabilitation programs that use vague, nondirective, unstructured counselling;
- Intensive supervised probation or parole;
- Home confinement;
- Community residential programs;
- Urine testing;
- Increased referral, monitoring and management in the community;
- Correctional boot camps using the old-style military model; and
- Juvenile wilderness programs.

The list of criminal justice programs and policies MacKenzie lists as having been shown to be effective in reducing recidivism includes:

- Rehabilitation programs that target known criminogenic risk factors (e.g. antisocial attitudes, poor impulse control);
- Cognitive behavioural therapy;
- Community employment;
- Drug treatment; and
- Incapacitation of offenders who continue to commit crimes at very high rates.

This list is small, but it must be borne in mind that the effectiveness of many criminal justice programs, even in the United States, remains unknown. It is also worth remembering that it is not necessary to wait until a juvenile gets into trouble with the law before doing something to reduce their risk of involvement in crime. There are programs outside the criminal justice system that have been shown to be effective in reducing the risk of juvenile involvement in crime. The effectiveness of early intervention programs targeted at preschool and primary school children, such as Head Start and the Seattle Social Development Project, is already well known (National Crime Prevention 1999). Perhaps less well known are programs, such as Multi-systemic Therapy,[6] which target adolescents and teenagers and which have also been shown to be very effective in reducing the risk of juvenile involvement in crime (Farrington and Welsh 2002). There are also initiatives, such as mentoring, which have not yet been demonstrated in rigorous research to be effective, but which nonetheless appear very promising (Gottfredson, Wilson & Najaka 2002). Given the current state of our knowledge about what works in reducing juvenile recidivism it is probably unwise to rely on any one program. The better course is to develop a suite of options and use each as seems appropriate in any particular case.

Though it may seem trite to say so, there is a pressing need for further research into juvenile reoffending. It may be true that most juveniles who appear in the Children's Court reoffend within eight years but it is also true that a substantial minority (32%) do not. Putting every juvenile who is convicted of an offence on some kind of rehabilitation program would clearly be unnecessary, unduly intrusive and wasteful of scarce resources. We need a more precise delineation of which juveniles are most at risk of reoffending. It is safe to assume that virtually all Indigenous males and a large majority of Indigenous females will reoffend and reappear in court unless something is done to assist them. The position is less clear for non-Indigenous young people coming before the courts.
The age of a juvenile at their first court appearance provides some guidance on who is more at risk of reoffending but even here our ability to predict who will reoffend is limited. More than 40 per cent of juveniles who first appeared in the Children's Court aged between 10 and 14, for example, did not go on to have any adult court appearance.

It would be helpful to policy, therefore, if the present study were repeated with a much wider range of risk factors for juvenile reoffending. The sorts of factors that ought to be examined are those that can readily be assessed by a court or probation officer, such as whether the juvenile resides at home or in care, whether he or she has a close attachment to some responsible adult or caregiver, whether the young person is at school or has a job, the extent to which he/she regularly associates with delinquent peers and extent to which he/she is a regular user of alcohol and or other illicit drugs. Ideally such a study would be carried out, not only on juveniles making their first appearance in the Children's Court, but also on juveniles who are cautioned or referred to a youth justice conference. Of course, there is little point knowing who is most likely to reoffend if we cannot do anything to reduce the risk of reoffending. There is, accordingly, a clear need for more Australian research into which programs and interventions are effective in reducing the risk of involvement in crime. This is particularly true where Indigenous Australians are concerned.

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NOTES

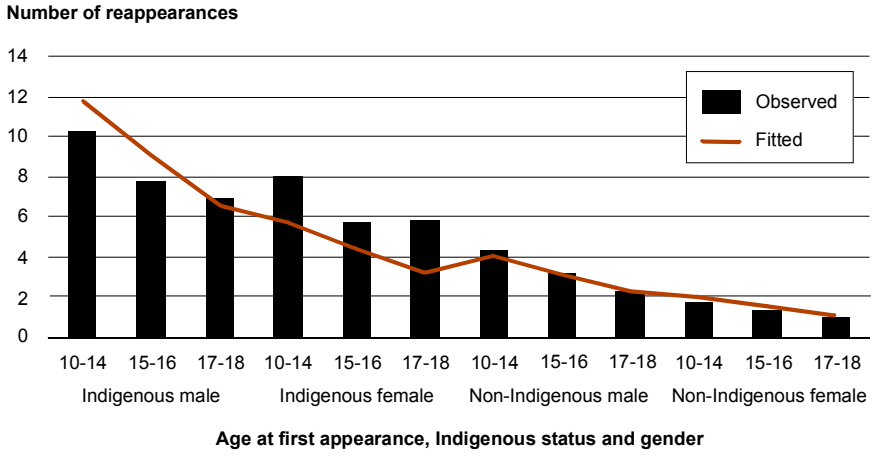
1. In New South Wales, children aged under 10 years are below the age of criminal responsibility.
2. In this analysis, the violent crime category includes homicide, acts intended to cause injury, sexual offences and robbery. The property crime category includes burglary, break and enter, deception and all other theft related crimes. The 'other' crime category includes offences involving drugs, property damage, public order, driving and offences against justice procedures.
3. See note 2 above
4. A higher rate of recidivism among offenders in our study would also be expected if many of the low-risk juvenile offenders who appeared in Coumarelos's study were now being dealt with by other means (e.g. a police caution). In fact, juvenile offenders are more likely to be diverted from the court system now than they were during the period 1982-1986 because the Young Offenders Act (1997) created a system of warnings, cautions and youth justice conferences as an alternative to referral to a court. This Act, however, was passed after the present study cohort made their first court appearance.
5. Such individuals would not have turned eighteen by the end of 1992.
6. Multi-systemic therapy (MST) is an intensive family and community based treatment that addresses the multiple determinants of serious antisocial behaviour in juvenile offenders. It aims to improve caregiver discipline practices, enhance family affective relations, decrease youth association with delinquent peers and engage youth in prosocial recreational outlets. See http://www.mstservices.com/text/treatment.html.

APPENDIX 1

The goodness of fit of the model given in Table 2, (p=0.995) is evident from Figure 10.

Figure 10, below, shows the average number of subsequent observed and fitted court appearances by age, Indigenous status and gender. The accuracy of the model for the non-Indigenous males and females is apparent across each age group. Thus, the model can be confidently used to predict the number of court appearances non-Indigenous juveniles will have subsequent to their first Children's Court appearance. However, while close, the model is not as accurate a fit for Indigenous juveniles. The model over-predicts the number of subsequent court appearances for males aged 10-14 and 15-16, and under predicts the number of subsequent court appearances for Indigenous females. This may be the result of having relatively small sample sizes for the Indigenous populations.

Figure 10: Average and expected number of court appearances after first Children's Court appearance



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