

# Early childhood behaviours, schooling and labour market outcomes: estimates from a sample of twins

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## Abstract

This paper examines the links between childhood conduct disorder problems and schooling and labour market outcomes net of genetic and environmental effects. The results show that individuals who experienced conduct disorder problems are more likely to leave school early, have poorer employment prospects and lower earnings. These findings are shown to be due to the genetic and environmental influences that are generally not considered in studies of schooling and labour market outcomes.

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## 1. Introduction

Studies of school leaving decisions have canvassed a wide range of potential determinants. The most recent studies in Australia, for example, by Long, Carpenter, and Hayden (1999); Marks, Fleming, Long, and McMillan (2000) and Le and Miller (2004), have shown how school leaving decisions are related to the type of school attended, early childhood achievements in literacy and numeracy, and family background factors, including family size, family wealth, language characteristics, parents' levels of education and father's occupa-

tional status. The strongest predictors of the likelihood of completing year 12 are early childhood achievements in literacy and numeracy. This is consistent with the findings reported in studies of twins, where up to 65% of the variance in educational attainments has been attributed to genetic factors (Baker, Treloar, Reynolds, Heath, & Martin, 1996; Miller, Mulvey, & Martin, 2004).

While there is reasonable agreement among these studies on the factors affecting school leaving decisions,<sup>1</sup>

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<sup>1</sup>Similarly, there was agreement among earlier studies of school leaving decisions in Australia. See, for example, Miller and Volker's (1989) discussion of the similarities between their findings and those reported by Williams, Harsel, Clancy, Miller, and Greenwood (1987).

the understanding of these decisions is still far from complete. At a time when there is considerable emphasis on education in the knowledge economy, around one quarter of teenagers in Australia do not complete high school. Why does this sizeable group of teenagers depart from the norm on such an important decision that will help shape their future?

Examination of school completion rates for given levels of ability, or among low socio-economic status groups, reveals considerable variation. This is consistent with the relatively low degrees of explanation of the models of school leaving decisions discussed above. Other factors are presumably at work? One such set of factors may be childhood behaviours. Among these are truancy, bullying and deviant behaviour. These behaviours are identifiable, measurable, and, according to the limited literature available, likely to have significant adverse consequences on school leaving decisions.

Moreover, it is possible that these behaviours also impact on the patterns of success and failure in the labour market in the post-school period. This might occur where the behaviours persist (for example, where aggression at school carried over to aggression in the workplace) or where the childhood events are associated with a permanent scar to the individual's employment record in the same way that teenage unemployment has been argued to permanently disadvantage people when older (e.g., [Australian Institute of Multicultural Affairs, 1985](#)).<sup>2</sup>

This paper presents evidence on the links between childhood behaviours and school leaving decisions and labour market outcomes in Australia. It shows that adverse childhood behaviours are linked to early school leaving as well as to poor labour market outcomes. Particular childhood behaviours that are associated with the decision to leave school early are identified and ranked in importance. The extent to which the links between childhood behaviours and school learning decisions and labour market outcomes are in fact attributable to ability and family background factors is assessed using information on twins. The structure of the paper is as follows. Section 2 reviews the literature that has attempted to quantify the links between childhood behaviours and schooling and labour market outcomes. The data set used in the empirical work is introduced in Section 3, while the statistical analyses are presented in Sections 4 and 5. Section 6 contains a summary and conclusion.

## 2. Literature review

Children can experience a range of behavioural problems, including conduct disorder, personality disorder, delinquency and immaturity that have the potential to affect their educational outcomes. This is for several reasons, including impacts on academic performance, aggressive behaviour and adolescent delinquency, more, and more frequent, problems with teachers and other school authorities, association with the wrong people and general alienation from school.

[Quay \(1978\)](#) classified these behavioural problems into four major groups, namely conduct disorder, personality disorder, inadequacy-immaturity syndrome and socialised or subcultural delinquency. Characteristics associated with conduct disorder include disobedience, disruptiveness, fighting, defiance of authority, quarrelsomeness, dislike for school and destructiveness of property. The typical characteristics associated with personality disorder, as characterised by [Quay \(1978\)](#), include shyness, anxiety, a lack of self-confidence, crying, sensitivity, worrying and inability to have fun. Individuals suffering from inadequacy-immaturity syndrome typically exhibit short attention span, daydreaming, excessive giggling and being easily flustered and confused. Individuals who are categorised as exhibiting Socialised or Subcultural Delinquency characteristics are generally the product of their environment. Typical behaviours include gang activities, cooperative stealing, habitual truancy, and being accepted by and identified with a delinquent subgroup. While each of these behavioural problems has been shown to be important to a range of childhood and young adult outcomes, this study focuses on conduct disorder, which is the behavioural problem most commonly analysed.

A number of studies have documented links between conduct disorder and schooling outcomes. [Fergusson and Horwood \(1998\)](#), for example, show that general conduct problems identified when individuals were eight years old increased their risk of leaving school without qualifications (i.e., left school at 18 years and failed to obtain a grade C or better in at least one School Certificate subject). This effect did not differ significantly between males and females.

The age of onset of the childhood conduct disorder problems and whether these persist both seem to be important. [Farmer \(1995\)](#), for example, shows that contrary to expectations, boys who were first identified as having problems at age 16 left school earlier and had a lower level of qualification than those who were first identified as having problems at age seven. However, boys whose anti-social behaviours were first identified at age 16 attained a higher level of qualification than those who first exhibited these problems at age 7 or 11 and whose behaviours persisted to age 16. [Farmer \(1995\)](#) argues that it is temporal proximity to the school leaving

<sup>2</sup>The [Australian Institute of Multicultural Affairs \(1985, p. 61\)](#) argues that "... young people who suffer long initial periods of unemployment (and thus have limited work experience) tend to have more difficulty in obtaining employment when older — a finding supporting the existence of what has been called the 'scar' effect".

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