

Australian Institute of Family Studies

The Australian Institute of Family Studies is Australia's national centre for research and information on families. Now in its twenty-fifth year, the Institute's research on issues that affect family stability and wellbeing play a key role in the development of family policy and informed debate in Australia. The Institute is a statutory authority established by the Australian Government in February 1980.

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The Australian Temperament Project is a large longitudinal study of children's development which began in 1983 with the enrolment of a representative sample of 2443 infants and their families from urban and rural areas of Victoria. The study investigates pathways to psychosocial adjustment from childhood to adulthood, and the influence of personal, family and environmental factors. Since early in 2000, the Australian Institute of Family Studies has been collaborating with researchers from the University of Melbourne and the Royal Children's Hospital in this ongoing research project.

Patterns and precursors of adolescent antisocial behaviour

O U T C O M E S A N D C O N N E C T I O N S



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A collaborative partnership between the Australian Institute of Family Studies and
Crime Prevention Victoria, Department of Justice.



AUSTRALIAN TEMPERAMENT PROJECT

A study of development from infancy to adulthood



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Minister's foreword

Victoria is one of the best places to raise a family because we have some of the safest homes, streets and neighbourhoods in the nation.

Early intervention is important. Experts from around the world agree that keeping young people out of trouble from an early age is the best way to help them stay on track. This is why I applaud the work of the Australian Institute of Family Studies and Crime Prevention Victoria for their work on the series *Patterns and Precursors of Adolescent Antisocial Behaviour*.

The third and final report looks at the common risk factors between young people who engage in criminal and anti-social behaviour. This report builds on the work of two previous reports, and follows more than 2000 Victorian children and their families from infancy to adulthood.

By looking at the environmental and social factors that children and families are exposed to, this study identifies patterns and behaviours that could point towards the need for early intervention strategies.

It is aimed at developing a better understanding of antisocial and criminal behaviour in young people. By identifying problems early we can prevent children from heading down the wrong path.

I congratulate both the Australian Institute of Family Studies and Crime Prevention Victoria on delivering this innovative research project with sound, empirically-based evidence to guide future prevention and early intervention efforts.

Tim Holding MP

Minister for Police & Emergency Services

Director's foreword

Adolescent antisocial behaviour greatly concerns governments, researchers, and community members alike. Although this issue has been the focus of intensive research over recent decades, many questions regarding the development and consequences of this type of behaviour remain to be answered. Effective prevention and early intervention efforts to avert the onset of antisocial behaviour among children and adolescents rely to a large extent on an accurate understanding of its origins and course. Thus the research contained in this report is particularly welcome.

The report *“Patterns and Precursors of Adolescent Antisocial Behaviour: Outcomes and Connections – Third Report”* continues the valuable work of the first two reports in this series, and marks the culmination of the collaboration between the Australian Institute of Family Studies and Crime Prevention Victoria. It makes use of the Australian Temperament Project dataset to investigate six distinct topics relating to adolescent antisocial behaviour. This large longitudinal, community study has followed children's development over the first 20 years of life, investigating their psychosocial adjustment and wellbeing, and the influence of family and wider environmental factors via 13 waves of data collected from a representative sample of 2,443 children and parents.

The six topics addressed in the Third Report are: the continuity of persistent adolescent antisocial behaviour into early adulthood; links between antisocial behaviour and victimisation during early adulthood; associations between adolescent substance use and antisocial behaviour; the development of persistent antisocial behaviour among low-risk children; connections between motivations to comply with the law, attitudes, and antisocial behaviour; and the correspondence between official records and self reports of offending and victimisation.

I highly commend this report, which contains important new knowledge about the development of antisocial behaviour among young Australians, and its impact upon their wellbeing and adjustment. I am confident that it will provide valuable insights for policy development and practical interventions, and add substantially to our knowledge of this type of behaviour. Ultimately, through the understandings gained by research such as this, we will be able to help children to make the best start in life and promote their later positive development within the context of their family and community life.

Professor Alan Hayes

Director
Australian Institute of Family Studies

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Executive summary

This is the third and final report from the collaborative partnership between the Australian Institute of Family Studies and Crime Prevention Victoria. It further explores issues concerning adolescent antisocial behaviour and outcomes arising from it. The research draws upon data collected as part of a unique Australian study – the Australian Temperament Project.

The Australian Temperament Project (ATP) is a large, longitudinal study which has followed the development and adjustment of a community sample of children from infancy to early adulthood. The study began in 1983 with the recruitment of a representative sample of 2443 infants and their families living in urban and rural areas of Victoria. Approximately 65 per cent of the sample was still participating in the project in 2004. Thirteen waves of data have been collected over the first 20 years of the children's lives, using mail surveys. Parent, teachers and the children have reported on the child's temperament style, behavioural and emotional adjustment, social skills, health, academic progress, relationships with parents and peers, and the family's structure and demographic profile.

The Third Report focuses on six distinct issues: (1) the transition to early adulthood, and the continuation, cessation and commencement of antisocial behaviour; (2) connections between antisocial behaviour and victimisation; (3) the role of substance use in the development of adolescent antisocial behaviour; (4) why do some low risk children become antisocial adolescents; (5) motivations to comply with the law, attitudes, and antisocial behaviour; and (6) concordance between official records and self-reports of offending and victimisation.

Many of the findings report the progress of the three groups identified in the First Report from this collaborative project, who displayed differing patterns of antisocial behaviour across adolescence. These were:

- a *low/non antisocial* group, N=844, 41 per cent male (these adolescents consistently exhibited no, or low levels of antisocial behaviour at 13-14, 15-16 and 17-18 years);
- an *experimental antisocial* group, N=88, 43 per cent male (these adolescents exhibited high levels of antisocial behaviour at only one time point during early-to-mid adolescence and then desisted); and
- a *persistently antisocial* group, N=131, 65 per cent male (these adolescents reported high levels of antisocial behaviour at two or more time points, including the latest time point of 17-18 years).

The findings concerning victimisation and motivations to comply with the law compare two additional groups who displayed differing patterns of antisocial behaviour at 19-20 years of age: a *highly antisocial* group (N=177) who had engaged in three or more different types of antisocial acts in the past 12 months, and a *low/non antisocial* group (N=963) who had engaged in fewer than three different types of antisocial acts in the past 12 months.

Transitions to early adulthood: stability and change in antisocial behaviour

While rates of most types of antisocial behaviour are known to decrease from adolescence to early adulthood, less is known about individual trends. To what extent do young people who consistently engage in antisocial behaviour during adolescence continue their involvement in antisocial behaviour in adulthood? Do individuals who display particular types of adolescent antisocial behaviour differ in their later opportunities, experiences and wellbeing? Is there a late onset pathway to antisocial behaviour that begins in early adulthood?

Findings on these issues revealed that, first, the majority of individuals who had engaged in *persistent antisocial* behaviour at multiple time points during adolescence continued to display antisocial behaviour at 19-20 years (55 per cent). The considerable minority who did not maintain high levels of such behaviour (45 per cent) often reported some continuing lower frequency involvement. It did not seem that this decreasing involvement in antisocial behaviour was associated with any particular life experiences or circumstances, individual characteristics or interpersonal relationships.

Second, a small *late onset antisocial* group was found (N=68). This group had not engaged in high levels of antisocial behaviour during early or mid adolescence, but began to display this type of behaviour for the

first time during late adolescence or early adulthood. The *late onset* group was compared to three groups: (a) the *low/non antisocial* group who never displayed high levels of adolescent antisocial behaviour; (b) the *persistent antisocial* group; and (c) the *experimental antisocial* group who engaged in antisocial behaviour in early adolescence and then desisted.

Comparisons of the progress of these four groups revealed that the *experimental* group closely resembled the *low/non* group at 19-20 years, and both groups appeared to be faring well. The *late onset* group did not appear to experience a more difficult transition in terms of their participation in work and study, but more frequently experienced interpersonal and adjustment difficulties. The *persistent* group was less likely to have completed secondary schooling and to be undertaking further study by comparison with the other three groups. This group also more frequently displayed long-standing adjustment and interpersonal relationship difficulties, highlighting the long-term impact of persistent adolescent antisocial behaviour and the desirability of prevention and early intervention efforts to avert its development.

Connections between antisocial behaviour and victimisation

As well as being responsible for more offences than older individuals, young people experience the highest rates of victimisation, and there may be links between engagement in antisocial behaviour and the experience of victimisation. Factors implicated in the occurrence of victimisation are thought to include lifestyle characteristics and activities, and interpersonal characteristics.

When these issues were investigated it was found that approximately one-third of the 19-20 year olds had experienced victimisation during the previous 12 months. The most frequent types of incidents reported were threats of violence, followed by theft from a motor vehicle, and other theft. The relationship between victimisation and antisocial behaviour was complex. On one hand, two-thirds of those who engaged in high levels of antisocial behaviour at 19-20 years had experienced victimisation. Furthermore, those who engaged in violent antisocial behaviour were also very likely to experience violent victimisation. On the other hand, looking at the group of young people who experienced victimisation, it was found that the majority had not engaged in high levels of antisocial behaviour at 19-20 years.

Lifestyle factors and specific social contexts appeared to increase the risk of victimisation. About half the victimisation incidents had been reported to police. The main reasons for not reporting such incidents were their perceived lack of importance, negative attitudes towards the police, or a belief that the incident was a private matter. The implications for crime prevention were highlighted and it was suggested that a clearer focus on victimisation could have dual benefits in reducing both antisocial behaviour and victimisation.

Substance use and antisocial behaviour

Adolescent substance use is associated with a wide range of difficulties in personal and social functioning, such as decreased educational attainment and mental health problems. It is also strongly associated with engagement in antisocial behaviour in both adolescence and later in adulthood. The overlap between antisocial behaviour and substance use was investigated, as were the role of substance use in the development of antisocial behaviour, and the influence of substance using and/or antisocial peers.

Strong links between adolescent substance use and antisocial behaviour were revealed. There was a considerable overlap between the occurrence of antisocial behaviour and substance use at the same point in time. In addition, individuals who engaged in *persistent antisocial* behaviour from early to late adolescence had the highest rates of all types of substance use, followed by those who engaged in *experimental antisocial* behaviour, while adolescents who did not engage in antisocial behaviour had the lowest rates of substance use. Investigation of across-time pathways between substance use and antisocial behaviour revealed strong bi-directional pathways between the two types of behaviours. Peers' levels of involvement in antisocial behaviour and/or substance use were closely linked to adolescents' own engagement in such behaviours.

The powerful association between antisocial behaviour and substance use found serves as a reminder that antisocial adolescents frequently experience a wide range of difficulties, underlining the need for broad-based intervention programs that assist these young people in a number of areas of their lives.

Why do some low risk children become antisocial adolescents?

The Second Report showed that while most *persistently antisocial* adolescents had a history of childhood problematic behaviour, a small sub-group (N=42) had relatively problem-free childhoods and first began

to display difficulties during early adolescence. Their progression to *persistent adolescent antisocial* behaviour was unexpected, and could not have been predicted from their earlier development. Their across-time pathways, and the factors which may have contributed to a change in pathways, were investigated. As well, these individuals were followed forwards into early adulthood to investigate whether antisocial behaviour persisted or ceased, as well as their adjustment and wellbeing.

The first differences between the *low risk persistently antisocial* sub-group and the *low/non antisocial* group emerged during early adolescence, at 12-13 years (Year 7 for the great majority). Differences became more widespread during adolescence and peaked at 15-16 years of age, although numerous differences were still evident at 19-20 years. During the early secondary school years, the *low risk antisocial* sub-group was notably more involved with antisocial peers and less attached to school than the *low/non antisocial* group. They also began to display more difficult traits and behaviour as well as lower social skills. By mid adolescence there were more extensive differences between these two groups. As the *low risk antisocial* sub-group became more differentiated from the *low/non antisocial* group, it became increasingly similar to the *high risk persistently antisocial* group (N=89). However, generally the *high risk antisocial* sub-group displayed more severe and diverse difficulties than the *low risk antisocial* sub-group, and thus appeared to be faring worse at this age.

The majority of individuals from both antisocial sub-groups (*low risk* and *high risk*) continued to engage in high levels of antisocial behaviour in early adulthood (19-20 years). The differences between the *low risk antisocial* and *low/non antisocial* groups found in adolescence were again evident in early adulthood. Thus, the *low risk antisocial* sub-group more frequently engaged in problematic and risk-taking behaviours such as substance use, risky driving and speeding. Fewer had completed secondary school or undertaken further education. They were more often involved in antisocial peer friendships. The *low risk antisocial* sub-group continued to be very similar to the *high risk antisocial* group on these characteristics, but otherwise displayed a more limited, and generally less severe range of difficulties in early adulthood. Thus, there appeared to be few differences in the early adulthood outcomes of individuals traversing these differing pathways to *persistent adolescent antisocial* behaviour, regardless of the age of onset.

Motivations to comply with the law, attitudes, and antisocial behaviour

Connections between motivations to comply with the law, attitudes toward police and courts, and engagement in antisocial behaviour were explored. Two types of motivations were investigated: the perceived risk of apprehension if an offence is committed, and a sense of community attachment or civic mindedness. The attitudes towards police and courts of those who did, or did not, engage in antisocial behaviour were also examined.

Perceptions of the risk of apprehension were found to be inversely related to involvement in antisocial behaviour at 19-20 years of age. Only one of the three aspects of civic mindedness, trust in organisations, differentiated between *highly antisocial* and *low/non antisocial* young adults. Overall, perceptions of the risk of apprehension appeared to be a more important influence on engagement in antisocial behaviour than civic mindedness.

In general, most young adults held positive attitudes toward the police and courts. Across a range of aspects, an average 63 per cent of young people indicated that they had some or a great deal of confidence in the effectiveness of these agencies. Most *low/non antisocial* young people who had reported a victimisation incident to police expressed positive attitudes toward police and the courts, perhaps reflecting satisfaction with the way these agencies had attended to their needs. However those who were *highly antisocial* and/or had contact with police and courts for offending, were less positive in their attitudes towards the police and courts. A number of reasons for the lower confidence of these individuals were proposed, as were approaches for inhibiting the development of such attitudes.

Official records and self-reports of offending and victimisation

The similarities and differences between self reports and the official records maintained by police were investigated. Official records and self reports were compared on criminal acts, contact with police and courts for offending, and contact with police regarding victimisation. The similarities and differences in the profiles of individuals identified by official records and self reports were also explored.

The analyses were restricted to the individuals who gave permission for access to official records (74 per cent). While there were no differences between those who consented and those who did not on

family socio-economic background and community/local area characteristics, those who consented had less often engaged in antisocial behaviour and were less often males. However, a considerable number who did consent had engaged in antisocial behaviour and/ or self-reported contact with police or courts for offending.

The great majority of individuals who had an official record for offending also self reported engaging in the behaviour in question. Additionally, official records concerning victimisation incidents were matched quite closely by self reports, with almost four-fifths of individuals with a record for such an incident self reporting that they had contacted police regarding the incident. These findings suggest that self reports tend to be relatively accurate and reliable. However, when self reports were compared to official records, only a minority of those who self reported offending were found to have an official record. Among the reasons why self reported offending may not have been recorded are: the offence may not have taken place, the offence may not have been detected; there may have been insufficient evidence for further action, or the offence may have been dealt with unofficially. These findings are consistent with other research into this issue, and several explanations for the findings were offered. Agreement between self reports and official records was also relatively low for victimisation incidents.

The socio-demographic profiles of the group of offenders identified by official records was compared to the profile of the group of *persistently antisocial* adolescents identified by self reports and found to be similar. There were no significant differences on any aspect, including gender ratio, family socio-economic background; residence in a metropolitan, regional or rural location; and characteristics of the local area in which these young people lived (for example, unemployment rates, economic resources, crime rates). Thus, there was no evidence that the profile of offenders identified by official records was unrepresentative or atypical.

Implications

Reflecting on the findings from all three reports from this collaborative project, several important implications were highlighted. It is important to note that while occasional, limited engagement in antisocial behaviour was found to be relatively common, only a minority of young people (never more than 20 per cent) were involved in high levels, or persistent, antisocial behaviour at the separate time points. Nevertheless, the actual and psychological costs of antisocial behaviour to the individual, his/her family, community and society can be extensive.

The diversity of pathways to antisocial behaviour

A number of distinct pathways to antisocial behaviour commencing in early childhood, early adolescence and early adulthood were revealed. There appeared to be few differences in the later outcomes of individuals traversing these separate pathways, regardless of the age of onset. However, somewhat differing clusters of risk factors were identified for the differing pathways. The pathway commencing in early childhood was the most common. Fewer individuals followed the pathways that began in early adolescence and early adulthood. Considerable capacity for a change in pathways both in both childhood and adolescence was demonstrated. Several important transition points were identified that coincided with periods when major life changes were occurring. Key transition points at the entry to primary and secondary schooling may provide particularly promising opportunities for interventions, when children are especially amenable to change.

The co-occurrence of problem behaviours

Antisocial behaviour frequently co-occurred with other types of problem behaviours, such as substance use. One likely consequence of the overlap in problem behaviours is that strategies aimed at preventing the development of one type of problem behaviour may have a wide impact, preventing or ameliorating the development of other problem behaviours. However, there was considerable variability among young people who engaged in antisocial behaviour and not all highly antisocial young people displayed multiple problem behaviours. Differing intervention strategies may be needed to cater for multi-problem, and single-problem, youth.

Intervention implications

The findings are a reminder that to be “high risk” merely increases the likelihood but not the inevitability of a problematic outcome. Similarly, to be “low risk” decreases the likelihood of an adverse outcome, but is not a guarantee of a positive one. The environmental contexts in which children’s development takes place, especially the family, peer and school contexts, were found to be powerful influences on the development of antisocial behaviour. For some children, these environments appeared to provide a buffering or protective

influence which assisted them to move onto more positive developmental pathways. For others, less optimal environmental influences may have been instrumental in diverting them from a positive pathway. Overall, a mix of community- and school-based initiatives, together with more individualised approaches, may provide the most effective means of preventing or reducing the development of antisocial behaviour.

Summary

This Third Report marks the culmination of the very productive collaboration between the Australian Institute of Family Studies and Crime Prevention Victoria. It is hoped that the findings contained in these three reports, which offer data from a unique study of Victorian children and families, will contribute to the evidence base to guide policy making and practical interventions aimed at preventing the development of antisocial behaviour in young Australians.

1



Introduction

Introduction

This is the third and final report in the series *Patterns and Precursors of Adolescent Antisocial Behaviour* investigating the patterns and development of antisocial behaviour among a representative sample of Victoria adolescents. The Report is the product of the collaborative partnership between the Australian Institute of Family Studies and Crime Prevention Victoria, which began in 2001 when Crime Prevention Victoria commissioned the Institute to collect and analyse Australian Temperament Project data concerning the development of antisocial behaviour in adolescence and early adulthood. The findings emerging from the project provide a valuable knowledge base which can inform and guide prevention and early intervention efforts.

The Australian Temperament Project (ATP) is a large, longitudinal study which has followed the development and adjustment of a community sample of Victorian children from infancy to young adulthood, with the aim of tracing the pathways to psychosocial adjustment and maladjustment across the children's lifespan (Prior, Sanson, Smart, and Oberklaid 2000). Upon recruitment, the sample consisted of 2443 infants (aged four to eight months) and their parents, who were representative of the Victorian population. Approximately two-thirds were still participating in the study in 2004. A total of 13 waves of data have been collected thus far, via annual or biennial mail surveys. Parents, teachers and the young people themselves have acted as informants at various stages during the project.

The First Report from this collaborative project, *Patterns and precursors of adolescent antisocial behaviour* (Vassallo, Smart, Sanson, Dussuyer, McKendry, Toumbourou, Prior and Oberklaid 2002), examined the nature and extent of antisocial behaviour among participating adolescents; identified different patterns of antisocial behaviour; and the precursors of this type of behaviour. In summary, antisocial behaviour was found to be quite common between the ages of 13 and 18 years. For example, at 13-14 years, one in three adolescents had been involved in a physical fight in the past year, and at 17-18 years, over 40 per cent reported having skipped school at least once in the past year. Substance use (especially cigarette and alcohol use) was also relatively common, especially during mid to late adolescence.

A number of distinct patterns of antisocial behaviour were identified. These included a *low/non antisocial* pattern (little or no antisocial behaviour between the ages of 13 and 18 years, 73 per cent of adolescents), an *experimental* pattern (high levels of antisocial behaviour during early- to mid-adolescence only, 8 per cent of adolescents), and a *persistent* pattern (high levels of antisocial behaviour throughout adolescence, 11 per cent of adolescents). The low/non antisocial pattern was by far the most common, although close to 20 per cent of adolescents were found to have engaged in high levels of antisocial behaviour at some stage.

The antecedents of *persistent* and *experimental* antisocial behaviour were investigated. Significant differences between the *persistent* antisocial group and the *low/non* antisocial group were evident from the early primary school years on, and increased in strength and diversity over time. A range of precursors of *persistent* adolescent antisocial behaviour was found. The most powerful precursors centred on intra-individual characteristics such as temperament, behaviour problems, social skills, levels of risk-taking behaviour and coping skills. Additionally, school adjustment and peer relationships, particularly antisocial peer friendships, emerged as important. Significant group differences in aspects of the family environment, such as the quality of the parent-child relationship and parental supervision of adolescents' activities, were also found. Risk factors for *experimental* adolescent antisocial behaviour were identifiable from the early secondary school years onwards, and were similar, but generally less powerful, than those identified for *persistent* antisocial behaviour.

The Second Report, *Patterns and precursors of adolescent antisocial behaviour: Types, resiliency and environmental influences* (Smart, Vassallo, Sanson, Richardson, Dussuyer, McKendry, Toumbourou, Prior and Oberklaid 2003), focused on four specific issues related to antisocial behaviour in adolescence and early adulthood. These were: the precursors and pathways to violent and non-violent adolescent antisocial behaviour; resilience against the development of adolescent antisocial behaviour; connections between Local Government Area characteristics and adolescent antisocial behaviour; and patterns of antisocial behaviour in early adulthood (19-20 years).

Distinct developmental pathways and risks for violent and non-violent adolescent antisocial behaviour were found. Some risk factors were common to both types of antisocial behaviour, such as aggression, a less "persistent" temperament style (difficulties in persevering with tasks and activities), school adjustment difficulties, and lower social skills. Additionally, some risk factors applied particularly to violent antisocial adolescents, such as a more "reactive" temperament style (volatility, intensity, moodiness), higher sensation seeking, and greater difficulties in interpersonal relationships. The importance of distinguishing between subtypes of violent youth was also demonstrated, and the longstanding difficulties of the small sub-group who engaged in both violent and non-violent antisocial behaviour were highlighted.

The investigation of resilience revealed that a marked change in the developmental pathways of the “at risk” group who did not subsequently engage in adolescent antisocial behaviour took place over the early secondary school years. While equally as problematic during childhood as the “at risk” group who progressed to adolescent antisocial behaviour, the “resilient” sub-group was found to improve in many life domains. These included a decrease in aggressiveness, improvement in social skills, greater control of emotions, an “easier” temperament style than previously, improving relationships with parents, and greater school attachment and achievement. Additionally, the “resilient” sub-group had not developed friendships with other antisocial youth, and tended to receive better quality parenting (for example, closer supervision). Thus, a range of personal, environmental and situational factors appeared to be important in diverting “at risk” children from a problematic pathway.

Effects of local government area characteristics on involvement in adolescent antisocial behaviour were not found. Thus, rates of *persistent, experimental* and *low/non* antisocial behaviour were similar among adolescents living in disadvantaged areas (local government areas that were ranked among the most disadvantaged 20 per cent in the state on various characteristics) by comparison with those living in less disadvantaged areas. Rates of adolescent antisocial behaviour were similar across metropolitan, regional or rural locations. Additionally, living in a disadvantaged or high crime area did not appear to interact with characteristics of the peer and family environment (a non-intact family unit, low levels of parental supervision, or frequent association with antisocial peers) to increase the likelihood that an individual would engage in persistent adolescent antisocial behaviour. However, several methodological difficulties limited somewhat the study’s ability to thoroughly investigate this issue.

The investigation of antisocial behaviour in early adulthood found that such behaviour was relatively common, with 46 per cent reporting engagement in one or more type of antisocial acts during the past year. However, most young people were involved in a small number and range of antisocial acts. For most types of behaviour, very few engaged in the behaviour on more than one occasion. Overall, 15 per cent had engaged in high levels of antisocial behaviour (defined as engagement in three or more different types of antisocial acts within the previous 12 months, a decrease from the rates of 20 per cent found at 15-16 and 17-18 years. The across-time trends revealed that rates of many types of antisocial behaviour continued to decline from a peak at mid adolescence, although substance use increased steadily until late adolescence and remained constant from that time.

Following on from these two reports, this Third Report investigates six further issues related to antisocial behaviour in adolescence and early adulthood. The first four sections explore pathways to and from antisocial behaviour, the fifth section examines connections between antisocial behaviour and young people’s attitudes and values, and the sixth compares official records and self reports of antisocial behaviour. It is hoped that the findings will provide important information about the development of antisocial behaviour, as well as valuable new Victorian evidence to underpin early intervention and prevention efforts.

The issues investigated in the Third Report are:

- a) the continuity of antisocial behaviour into early adulthood;
- b) connections between antisocial behaviour and victimisation;
- c) the role of adolescent substance use in the development of adolescent antisocial behaviour;
- d) pathways to adolescent antisocial behaviour among low-risk children;
- e) relationships between motivations to comply with the law, attitudes, antisocial behaviour; and
- f) concordance between self reports and official records.

2



Transitions to early adulthood and the continuation, cessation and commencement of antisocial behaviour

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Transitions to early adulthood and the continuation, cessation and commencement of antisocial behaviour

The extensive body of research into adolescent antisocial behaviour reveals a complex picture. Not only have a wide range of risk factors been identified (Hemel, Cashmore, Gilmore, Goodnow, Hayes, Lawrence, et al. 1999), but there appear to be differing developmental pathways into and out of such behaviour (Vassallo et al. 2002). The risk factors delineated include individual characteristics such as aggressiveness and a volatile temperament style; facets of the family environment such as lower supervision and punitive parenting; school environment factors such as lower attachment and academic difficulties; problematic peer relationships, particularly friendships with antisocial peers; and community and broader societal characteristics such as crime- and violence-prone neighbourhoods and cultural norms concerning violence and antisocial behaviour.

The differing developmental pathways identified include “life course persistent” and “adolescent limited” patterns of antisocial behaviour (Moffitt 1993), and the “overt”, “covert” and “authority conflict” pathways described by Loeber and colleagues (Loeber and Stouthamer-Loeber 1998). Similarly, the collaborative project between the Australian Institute of Family Studies and Crime Prevention Victoria has identified *persistent* and *experimental* patterns of adolescent antisocial behaviour, as well as the risk factors for and pathways to these types of behaviour (Vassallo et al. 2002).

There also appear to be a number of key transition points in the pathways to adolescent antisocial behaviour. The current series of studies has shown that the early primary school years (from five to eight years of age), and the transition from primary to secondary school (from 12 to 14 years), are particularly significant points of change in developmental pathways (Smart et al. 2003; Vassallo et al. 2002).

First, the pathway of the group who engaged in *persistent* antisocial behaviour in adolescence began to noticeably diverge from the group who were never involved in such behaviour in adolescence during the early primary school years, suggesting a critical junction at this age. Higher levels of aggression, hyperactivity, volatility and poorer capacities to stay on task were evident among the *persistent* adolescent antisocial group from the early primary school years onwards.

Second, a number of children whose individual characteristics and attributes suggested that they were “at risk” for the development of antisocial behaviour in adolescence, were found to improve markedly in many spheres of their lives in the early secondary school years and did not progress to *persistent* adolescent antisocial behaviour. Their pathways first noticeably diverged from the “at risk” sub-group who went on to engage in *persistent* antisocial behaviour during the early secondary school years, suggesting a second important turning point. It appears that these two time points are sensitive transition periods, or critical crossroads, during which individuals may be particularly amenable to change, when prevention and early intervention efforts may be especially effective.

While epidemiological studies show that a general drop-off in offending occurs in early adulthood, there has been less research into individual trends, such as the continuation of *persistent* adolescent antisocial behaviour into adulthood, and the long-term impact of differing types of adolescent antisocial behaviour on the opportunities, experiences and wellbeing of young adults. Furthermore, the early adult stage of development may provide a third important transition point during which pathways may again change.

These issues are taken up here. Three research questions are investigated. What is the continuation of antisocial behaviour into early adulthood? Does a change in developmental pathways occur during early adulthood? What are the adult outcomes of adolescents who displayed differing patterns of adolescent antisocial behaviour?

An overview of research into the continuation of antisocial behaviour from adolescence to adulthood, and the impact of the transition to young adulthood on adjustment and wellbeing, is first presented.

Research into the continuation of antisocial behaviour into adulthood

Studies tracking trends over time show that the frequency of most types of antisocial behaviour declines from adolescence to early adulthood, particularly property and violent antisocial acts (Rutter, Giller and Hagell 1998). Rates of property offences tend to decline earlier than violent offences (Ross, Walker, Guarniere and Dussuyer 1994). However, the prevalence of substance use appears to increase across adolescence and peak in the twenties (Spooner, Hall and Lynskey 2001).

Within these broad trends, there are differing individual patterns of stability and change. Several longitudinal studies have investigated these individual patterns, focusing particularly on the continuation of *persistent* types of adolescent antisocial behaviour into adulthood (for example, Moffitt, Caspi, Harrington and Milne 2002). Some have focused on high-risk or socially disadvantaged samples (Farrington 1995), while others have involved representative community samples. Across both types of studies, considerable continuity of antisocial behaviour is evident among individuals who had engaged in *persistent* adolescent antisocial behaviour.

The influential Cambridge Study in Delinquent Development found substantial continuity of criminal behaviour from adolescence to adulthood among a sample of boys living in inner-city London (Farrington 1995). Almost three-quarters of young men who had received juvenile convictions were reconvicted between 17 and 24 years of age, and almost half were reconvicted between 25 and 32 years. The juvenile offenders who began offending early tended to become the most persistent offenders later on. Juvenile offenders also tended as adults to be involved in other problem behaviours, such as alcohol, cigarette and illicit drug use; gambling; and risky or drink driving.

By 32 years of age, a decrease in levels of antisocial behaviour had occurred across the sample, although those who were most problematic when younger continued to be the most problematic at this later age. As well as committing higher rates of offences, they were more likely to have mental health problems, employment difficulties, and be divorced or separated. Those with a history of persistent convictions were more problematic than “desisters” (those convicted only before 21 years of age) or “late-comers” (convicted after 21 years).

The study also examined the later life outcomes of a sub-group identified as being on an “adolescent-limited” pathway (this group exhibited problems for the first time in adolescence). While individuals in this group were not more prone to be convicted of an offence at 32 years, they continued to display a range of problem behaviours, including illicit drug use, heavy drinking, involvement in fights and criminal behaviour. However, their employment histories were similar to a non-antisocial sub-group, and their relationships with spouses were more positive than those of the group identified as “life-course persistent” (Nagin, Farrington and Moffitt 1995).

Similarly, the Dunedin Multidisciplinary Study of Health and Development has reported that adolescent boys identified as being on a life-course persistent pathway of antisocial behaviour had the highest rates of difficulties on a range of outcomes at 26 years of age (Moffitt et al. 2002). They had the highest rates of drug-related and violent crime, psychopathic personality traits, substance dependence, mental-health problems, and work and financial difficulties. Boys identified as progressing along an “adolescent-limited” pathway were also problematic at 26 years, although less severely than the “life course” persistent group. These young men tended to have elevated rates of property offences, as well as an impulsive personality style, mental-health problems, substance dependence, and financial difficulties.

Other factors found to be associated with the continuation of antisocial behaviour from adolescence to adulthood include lower intelligence, poorer scholastic achievement, more pathological personality characteristics, higher rates of substance abuse, and an earlier start on an antisocial pathway, according to the review by Elkins and colleagues (1997). As well, continuity of adolescent antisocial behaviour appears to be higher among males than females (Storvall and Wichstrom 2003). The Seattle Social Development Study has shown that the continuation of violence from adolescence to adulthood was most powerfully predicted by male gender and friends’ antisocial behaviour, with scholastic achievement exerting a protective effect against the persistence of violence (Kosterman, Graham, Hawkins, Catalano and Herrenkohl 2001). Adolescent alcohol use was found to be highly predictive of the continuation of criminal behaviour into adulthood among a Swedish cohort (Andersson, Mahoney, Wennberg, Kuehlhorn and Magnusson 1999).

In summary, in spite of the general decrease in antisocial behaviour that occurs in early adulthood, there appears to be considerable continuity of antisocial behaviour for particular sub-groups, especially those on persistent or “life-course” pathways. Factors found to increase continuity include male gender, personality traits, school difficulties, substance use, lower intelligence, friendships with antisocial peers, and an earlier onset of adolescent antisocial behaviour. However, the continuation of such behaviour into adulthood is not a ‘fait accompli’, with a number of individuals observed to desist. As well as the factors listed above, it is possible that the experiences and opportunities encountered in the early adult developmental period play a pivotal role in whether a continuation of antisocial behaviour from adolescence to adulthood occurs.

The transition to early adulthood

What features of early adulthood may make it a critical transition point? This period tends to be a time of considerable change, marked by major life transitions such as increasing psychological and social independence, the completion of secondary schooling, the commencement of higher education and/or employment, and the development of intimate relationships (Arnett 2000). At the same time, however, this stage is often nowadays one of prolonged financial and material dependence, with many young people studying longer, taking up employment, establishing careers and marrying later than in previous generations (Arnett 2000; Coles 1996).

The early adult years may also provide new opportunities and pressures. On one hand, some young people may be able to leave behind a difficult or troubled adolescence and find a new start and fulfillment in adult life through the development of a satisfying career (Horney, Osgood and Marshall 1995; Sampson and Laub 1993). The forming of romantic relationships may also provide a beneficial influence and facilitate positive change. For example, the development of a stable intimate relationship appeared to inhibit engagement in antisocial activities among young men who had previously been prone to such behaviour (Quinton, Pickles, Maughan and Rutter 1993). Similarly, Lackey (2003) highlighted the importance of a commitment to an intimate partnership and to employment in assisting young men to desist from violent behaviour. These findings are important for crime prevention as they point to the possibility of a change in pathways at this time.

On the other hand, the transition may be a difficult or challenging experience. Employment and career opportunities may be scarce, or the educational choices taken may be ill-suited, leading to an unsettled period. For example, a negative start in the transition from school to work may be a forerunner of longer-term difficulties (Lamb and McKenzie 2001). Intimate relationship difficulties and breakdown during early adulthood may be a considerable source of unhappiness (Larson, Wilson, Bradford Brown, Furstenberg and Verma 2002). Thus, while the transition to young adulthood can be associated with increased personal happiness and wellbeing for many young people, the life paths traversed at this time can also negatively affect adjustment and life satisfaction (Schulenberg, O'Malley, Bachman and Johnston 2000).

An extension of the peak age of offending from mid-adolescence into late adolescence and young adulthood has recently been observed, particularly among young men (Rutter, Giller and Hagell 1998). It has been suggested that the trend for an extended period of dependence may play a role in prolonging young people's engagement in antisocial and criminal behaviour (Moffitt et al. 2002).

There is also some evidence for the emergence of a *late onset* antisocial group during early adulthood. Moffitt and colleagues (2002) identified a group who had been aggressive in childhood but who were not antisocial in adolescence, yet who, by 26 years of age, were chronic low-level offenders. They also tended to be more anxious, depressed and isolated, and had experienced more financial and employment difficulties. Similarly, a small group of adult violent offenders who did not have an earlier history of aggression were identified by two other longitudinal studies (Farrington 1994; Magnusson, Stattin and Duner 1983). The review conducted by Elkins et al. (1997) concluded that the late onset offending group displays a similar profile of problems in adulthood as the life-course persistent group, and therefore may warrant particular attention.

In summary, the early adult years appear to be another key transition period in which a change in pathways may occur. For some, a cessation of antisocial and criminal behaviour takes place, while for others there is an onset of such behaviour for the first time. It is possible that the changes in pathways are influenced by the ease with which this transition period is negotiated.

Methodology

The collaboration between the Australian Institute of Family Studies and Crime Prevention Victoria provides an opportunity to explore a number of issues related to the continuity of antisocial behaviour from adolescence into early adulthood, and to explore the early adult outcomes of young people who display differing types of adolescent antisocial behaviour.

The following questions are investigated: What is the continuity of antisocial behaviour from adolescence to early adulthood? Can a late onset group be identified, and if so, what are the correlates of this type of behaviour? Are transition experiences related to the onset of antisocial behaviour in early adulthood? What are the life circumstances and wellbeing of young people with differing patterns of adolescent antisocial behaviour?

Participants

A detailed description of the methods used to recruit the sample, and the measures used over the first 12 survey waves, has previously been provided (see First Report from this collaborative project, Vassallo et al. 2002; also Prior, Sanson, Smart and Oberklaid 2000).

In brief, the Australian Temperament Project (ATP) cohort of 2443 infants and families, selected to be representative of urban and rural areas of the state of Victoria, Australia, was recruited in 1983. Thirteen waves of data have been collected by mail surveys from infancy to 19-20 years. Parents, Maternal and Child Health nurses, teachers, and the children themselves have completed questionnaires assessing adjustment and development over major domains of functioning.

Approximately two-thirds of the cohort is still participating after 20 years. A higher proportion of the families who are no longer participating are from a lower socio-demographic background or include parents who were not born in Australia. Importantly however, the retained sample closely resembles the original sample on all facets of infant functioning, with no significant differences between the retained and no-longer-participating sub-samples on any infancy characteristics (for example, temperament style, behaviour problems). Hence, while the study continues to include young people with a broad range of

attributes, it contains fewer families experiencing socio-economic disadvantage than at its commencement (although it still contains families living in diverse circumstances).

The data used come from 1140 young people (505 males, 635 females) who completed questionnaires during the thirteenth data collection wave at 19-20 years of age (in 2002). Parallel parent reports were also available for many of the facets of functioning assessed.

Measures

Adolescent antisocial behaviour measure

Data from the three survey waves from 13 to 18 years were used to identify differing across-time patterns of adolescent antisocial behaviour. The methods used are described in full in Vassallo et al. (2002), and will only be briefly described here.

First, individuals were classified as displaying high or low levels of antisocial behaviour at each time point (at 13-14, 15-16 or 17-18 years). Thus, adolescents who reported engaging in three or more different types of antisocial acts during the previous 12 months were classified as *highly antisocial* at that particular time point. Those who reported fewer than three different antisocial acts during the previous 12 months were classified as *low/non antisocial* at that time point.

Second, the classifications at the three time points were used to identify differing, across-time patterns of antisocial behaviour. While a number of trajectories were found, three main groups were identified. These were:

- 844 *low/non antisocial* individuals, 41 per cent male (these adolescents exhibited no or low levels of antisocial behaviour at all three time points);
- 88 *experimental* individuals, 43 per cent male (these adolescents exhibited high antisocial behaviour at only one timepoint during early-to-mid adolescence and then desisted); and
- 131 *persistent* individuals, 65 per cent male (these adolescents reported high antisocial behaviour at two or more timepoints, including the latest timepoint of 17-18 years).

The *low/non antisocial* trajectory was the most common, with 73 per cent of adolescents on this pathway; 11 per cent of adolescents appeared to be on a *persistently antisocial* pathway; and a further 8 per cent on an *experimental* pathway.

Early adulthood antisocial behaviour measure

The same strategy was used to identify young people who engaged in high levels of antisocial behaviour at 19-20 years. Thus, those who had been involved in three or more different types of the antisocial acts¹ listed in Table 1 during the past 12 months were categorised as *highly antisocial*, while those who were involved in fewer than three different types of such acts were categorised as *low/non antisocial*. A total of 177 individuals, 15.5 per cent of respondents (67 per cent of whom were male), were found to engage in high levels of antisocial behaviour at 19-20 years.

Table 1	Items used to assess antisocial behaviour at 19-20 years (2002)
	<ul style="list-style-type: none"> ■ Engaged in physical fights ■ Theft from a person or a house ■ Carried a weapon (e.g. gun or knife) ■ Attacked someone with the aim of seriously hurting them ■ Sold illegal drugs ■ Purposely damaged or destroyed others' property, including graffiti ■ Shoplifted ■ Broke into a house or building for purposes of theft ■ Theft from a motor vehicle # ■ Theft of a motor vehicle # ■ Copied computer software, CDs, DVDs, or videos in order to sell them # ■ Illegally accessed a computer network, system or files # ■ Received government benefits or compensation not entitled to (e.g. unemployment, youth allowance) # ■ Been paid for having sex with someone # ■ Used fake money, or someone else's credit / bank card or cheque without permission # ■ Used force to get money # ■ Had, or tried to have, sex with someone against their will # ■ Knowingly bought, sold or kept stolen goods # ■ Attacked someone while a member of a group or gang # ■ Marijuana use* ■ Illicit drug use* (e.g. sniffing, LSD, ecstasy, amphetamines, opiates)
	# New items added for this data collection wave
	* These items relate to the past month; all other items refer to the past year

1 The antisocial behaviour scale used at 19-20 years included several new items to accommodate the additional ways in which young adults engage in antisocial behaviour at this age.

Other measures at 19-20 years

The 19-20 years of age data set collected in 2002 contains a broad array of measures, covering many aspects of the young adult respondents' lives. These were grouped into four broad domains² – life circumstances, individual attributes, adjustment, and interpersonal and community relationships. A brief description of the measures is provided here. For further details of the measures used, refer to Appendix 1. Most measures came from self-report, with parent report also available for many of the aspects assessed.

Life circumstances

- *Vocational and educational circumstances* – currently in employment, currently undertaking a tertiary or further education course, current occupation (self report).
- *Educational history* – completed secondary schooling, Tertiary Entrance score obtained, undertaken multiple tertiary courses since leaving school (self report).
- *Employment history* – pattern of employment since leaving school (generally employed or periods of seeking employment) (self report).
- *Living arrangements* – with parents or away from home (self report).
- *Financial circumstances* – sources of income (paid employment, parental support, government assistance), average weekly income, financial strain (self report); parental assistance via payment of education fees, helping with bills or rent, providing a regular allowance, giving or loaning money, or other material support (parental report).
- *Family environment* – family socio-economic background, family experience of financial strain; parental unemployment (parental report)

Individual attributes

- *Temperament style* – approach-sociability, flexibility (for example, how adaptable she/he is), positive emotionality (for example, cheerfulness or happy mood), negative reactivity (for example, volatility or negativity), persistence (capacity to see things through to completion), distractibility (how easily distracted), activity (for example, energetic, on the go) (self and parental report).
- *Social competence* – empathy, responsibility, self control, assertiveness (self and parental report).
- *Religious faith* (self report).
- *Emotional control* – for example, ability to remain positive in difficult situations; *management of emotions* – for example, difficulty in controlling emotions (self and parental report).

Adjustment

- *Depression* – (Depression Anxiety Stress Scale, Lovibond and Lovibond 1995) (self report).
- *Stress* – (Depression Anxiety Stress Scale, Lovibond and Lovibond 1995) (self report).
- *Anxiety* – (Depression Anxiety Stress Scale, Lovibond and Lovibond 1995) (self report); anxiety-withdrawal – for example, is anxious, fearful; is depressed, sad (short form of Revised Behaviour Problem Checklist, Quay and Peterson 1987) (parental report).
- *Socialised aggression* – for example, admires people who act outside the law (short form of Revised Behaviour Problem Checklist, Quay and Peterson 1987) (parental report).
- *Conduct disorder* – for example, deliberately cruel to others; bullies or threatens others (short form of Revised Behaviour Problem Checklist, Quay and Peterson 1987) (parental report).
- *Alcohol and cigarette use* – in past month, deleterious effects of alcohol use, binge drinking (self report).
- *Risky driving* – speeding, driving when tired, drink driving, driving when affected by drugs, failure to wear seatbelt: averaged to form a composite risky driving score; number of times apprehended for speeding; number of motor vehicle crashes experienced (self report).
- *Experience of victimisation* – been physically attacked or threatened; experienced home burglary; had motor vehicle stolen; had other items stolen (self report).
- *Life satisfaction* – degree of satisfaction with employment/education situation, personal appearance, interpersonal relationships, standard of living, accomplishments, direction life is taking – averaged to form a composite life satisfaction score (self report).
- *Long-term physical or mental health problem* (parental report of young adult problem).

Interpersonal relationships and community involvement

- *Relationships with parents and friends* – parents' emotional support (for example, they understand young adult), informational support (for example, give guidance and support), instrumental support (for example, give practical help); parents' negative appraisal (for example, critical of young adult); conflict with parents; friends' emotional, informational, instrumental support; friends' negative appraisal (parallel items to those used to measure parental support); (MacDonald 1998) (self and parental report).
- *Size of friendship network* (self report).
- *Antisocial peer friendships* – for example, friends drink heavily, use drugs, break the law (self and parental report).

² Variables were grouped in this way to aid interpretability and to ensure that the analyses undertaken had acceptable variables-to-subjects ratios.

- *Involvement in a romantic relationship* (self report).
- *Romantic partner's antisocial behaviour* – for example, partner drinks heavily, uses drugs, breaks the law (self report).
- *Civic participation* – undertaken voluntary work, undertaken environmentally-oriented activities, acted to solve a local or neighbourhood problem, contacted media or government regarding a problem, voted in election, attended a public meeting: averaged to form a composite score (self and parental report).
- *Trust in organisations* – confidence in the fair or reasonable conduct of the media, governments, public service, local councils, business organisations, trade unions, religious organisations: averaged to form a composite score (self report).
- *Beliefs about the likelihood that a person would be apprehended for offending* – for example, for shoplifting, theft, assault, fraud, drink-driving, marijuana use, or drug trafficking: averaged to form a composite score (self report).
- *Perceptions of the fairness of police and courts* – attitudes regarding the ability of police and courts to protect society from crime; treat people fairly; discourage, prevent or solve crimes; refrain from using excessive force; and take victims' needs seriously: averaged to form a composite score (self report).

FINDINGS

In the following sections, findings are presented concerning, first, the continuation of antisocial behaviour into early adulthood, second, the onset for the first time of antisocial behaviour in late adolescence/young adulthood and the factors that might be related to the late onset of such behaviour, and, third, the early adult outcomes of groups with differing patterns of adolescent antisocial behaviour.

Continuity of adolescent antisocial behaviour in early adulthood

Rates of antisocial acts among Australian Temperament Project participants over the period from early adolescence to young adulthood have previously been reported (Smart et al. 2003). In brief, the frequency of most property and violent antisocial acts continued to fall from a peak at mid adolescence. The selling of illicit drugs, shoplifting and substance use at 19-20 years are exceptions and continued at similar levels to those found at 17-18 years.

Regarding levels of antisocial behaviour at 19-20 years among young people who had engaged in *persistent, experimental* or *low/non antisocial* behaviour from early to late adolescence, the *persistent antisocial* group was found to engage in high levels of antisocial behaviour at 19-20 years (three or more different types of antisocial acts in the past 12 months) significantly more often than the *experimental* and *low/non antisocial* groups³. High levels of antisocial behaviour were displayed by 55 per cent of the *persistent antisocial* group, while 14 per cent of the *experimental* and 7 per cent of the *low/non antisocial* groups were also found to engage in high levels of such behaviour at 19-20 years⁴.

Were particular factors associated with the continuation or cessation of antisocial behaviour among the *persistent adolescent antisocial* group? To investigate this question, the *persistent adolescent antisocial* group was divided into two sub-groups: one who maintained high levels of antisocial behaviour (N=57), and one who did not engage in high levels of antisocial behaviour at 19-20 years (N=47). These two sub-groups were compared on the four broad domains of functioning – life circumstances, individual attributes, adjustment, and interpersonal/community relationships⁵. Somewhat surprisingly, these multivariate analyses did not reveal any significant differences between the two sub-groups overall⁶.

To explore this issue further, the degree of engagement in antisocial behaviour among the *persistent adolescent antisocial* sub-group who did not engage in high levels of such behaviour at 19-20 years was investigated. Interestingly, three-quarters had been involved in some antisocial behaviour in the past year, with 38 per cent having committed two different types of antisocial acts and 36 per cent reporting engagement in one antisocial act. Thus, only a minority, approximately one-quarter, may have entirely desisted at this stage.

Could a late-onset group be identified?

As noted earlier, 48 *low/non antisocial* group individuals (that is, who were never highly antisocial from 13 to 18 years) were found to have engaged in high levels of antisocial behaviour at 19-20 years. As well, as described in the First Report from this collaborative project (Vassallo et al. 2002), a small sub-group of adolescents was found who had not engaged in high levels of antisocial behaviour in early or mid adolescence, but had displayed such behaviour in late adolescence which continued into young adulthood, (N=20). These two sub-groups were combined and classified as displaying a *late-onset* pattern of antisocial behaviour. (N=68, 69 per cent male).

3 Analysis of Variance was used to compare groups; $F(2, 891) = 118.04$; $p < .0001$

4 Not all members of these three groups participated in the 19-20 year survey wave. The actual numbers who displayed high levels of antisocial behaviour at 19-20 years were: 57 of the 104 *persistent* group individuals, 10 of the 76 *experimental* group individuals, and 48 of the 717 *low/non* group individuals.

5 Using Multiple Analysis of Variance (MANOVA) analyses, and Chi square analyses for a small number of categorical variables.

6 For reader interest, a small number of significant *univariate* group differences were found. All indicated greater problems among the group which continued high involvement in antisocial behaviour. Differences were found on - being a victim of crime (self report); antisocial peer friendships (self and parental report); confidence in the police and courts (self report); socialised aggression (parental report); deleterious effects of alcohol use (self report); and conflict with parents (self report).

In summary, while the majority of individuals who had displayed *persistent antisocial* behaviour across adolescence continued to engage in high levels of antisocial behaviour at 19-20 years (55 per cent), a sizeable minority did not (45 per cent). (High levels of antisocial behaviour were defined as involvement in three or more different antisocial acts within the previous 12 months). Additionally, 14 per cent of those displaying *experimental adolescent antisocial* behaviour and 7 per cent of those with *low/non antisocial* behaviour from 13 to 18 years engaged in high levels of antisocial behaviour in early adulthood.

Persistent group individuals who maintained high levels of antisocial behaviour in early adulthood were compared to their counterparts who had not engaged in high levels of antisocial behaviour in early adulthood, to investigate the factors that might have led to a change in behaviour. However, no significant multivariate differences were found. Looking more closely at the sub-group of *persistent antisocial* individuals who did not engage in high levels of antisocial behaviour in early adulthood, there were some signs of antisocial behaviour for the majority (although they did not meet the criteria developed of three or more different antisocial acts during the previous 12 months). Thus most reported engaging in one or two different types of antisocial acts and only one quarter appeared to have entirely desisted from antisocial behaviour at this age.

A sub-group of individuals was identified who, for the first time, reported high levels of antisocial behaviour at 19-20 years (N=48). Additionally, another 20 individuals had engaged in high levels of such behaviour at 17-18 and 19-20 years, but not in earlier adolescence. Thus, it seemed that the pathways of these two sub-groups appeared to change in early adulthood, and these individuals were categorised as displaying a *late onset* pattern of antisocial behaviour.

Outcomes of adolescents who displayed differing patterns of antisocial behaviour

The young adult outcomes of groups who displayed differing patterns of adolescent antisocial behaviour are next reported. These analyses aimed to investigate the long-term impact of adolescent antisocial behaviour on later functioning and wellbeing. As well, these analyses explore the factors which might be associated with the commencement of antisocial behaviour in late adolescence or in early adulthood among the *late-onset* group. The *persistent*, *experimental*, *low/non*⁷ *adolescent antisocial* groups and the *late-onset* group were compared on their life circumstances, individual attributes, adjustment, and interpersonal/community relationships at 19-20 years⁸. The groups comprised 104 *persistent*, 76 *experimental*, 68 *late onset* and 717 *low/non antisocial* individuals.

Aspects on which significant group differences were found are shown in Figures 1 to 7, while a summary of the findings is provided in Appendix 2. The Figures display the mean standardised scores⁹ (z scores) of the four groups on the variables for which significant group differences were found. Effect sizes were used to assess the strength of group differences across the various domains, and are included in the Figures¹⁰. For ease of interpretation, variables which were measures of the same domain of functioning are grouped together (for example, positive emotionality, persistence and activity – all of which are measures of temperament style - are grouped together in Figure 2).

Group differences on life circumstances

In general, the *persistent antisocial* group tended to be faring significantly less well than the other three groups (*low/non*, *experimental* and *late-onset*) on most facets of life circumstances measured, as shown in Figure 1. Most differences were between the *persistent* and *low/non antisocial* groups, but there were several aspects on which the *persistent* group was significantly different to all three other groups.

Aspects that particularly characterised *persistent antisocial* individuals were: fewer had completed secondary school, or were currently undertaking further study. Since leaving school, fewer had taken a university course of study, although they had undertaken other types of courses (for example, TAFE, other institutions or agencies). They tended to have higher incomes (perhaps because more were in full-time employment); but received less financial support from parents. Fewer were living at home. Turning now to the *late-onset* group, while they had high rates of secondary school completion and were currently

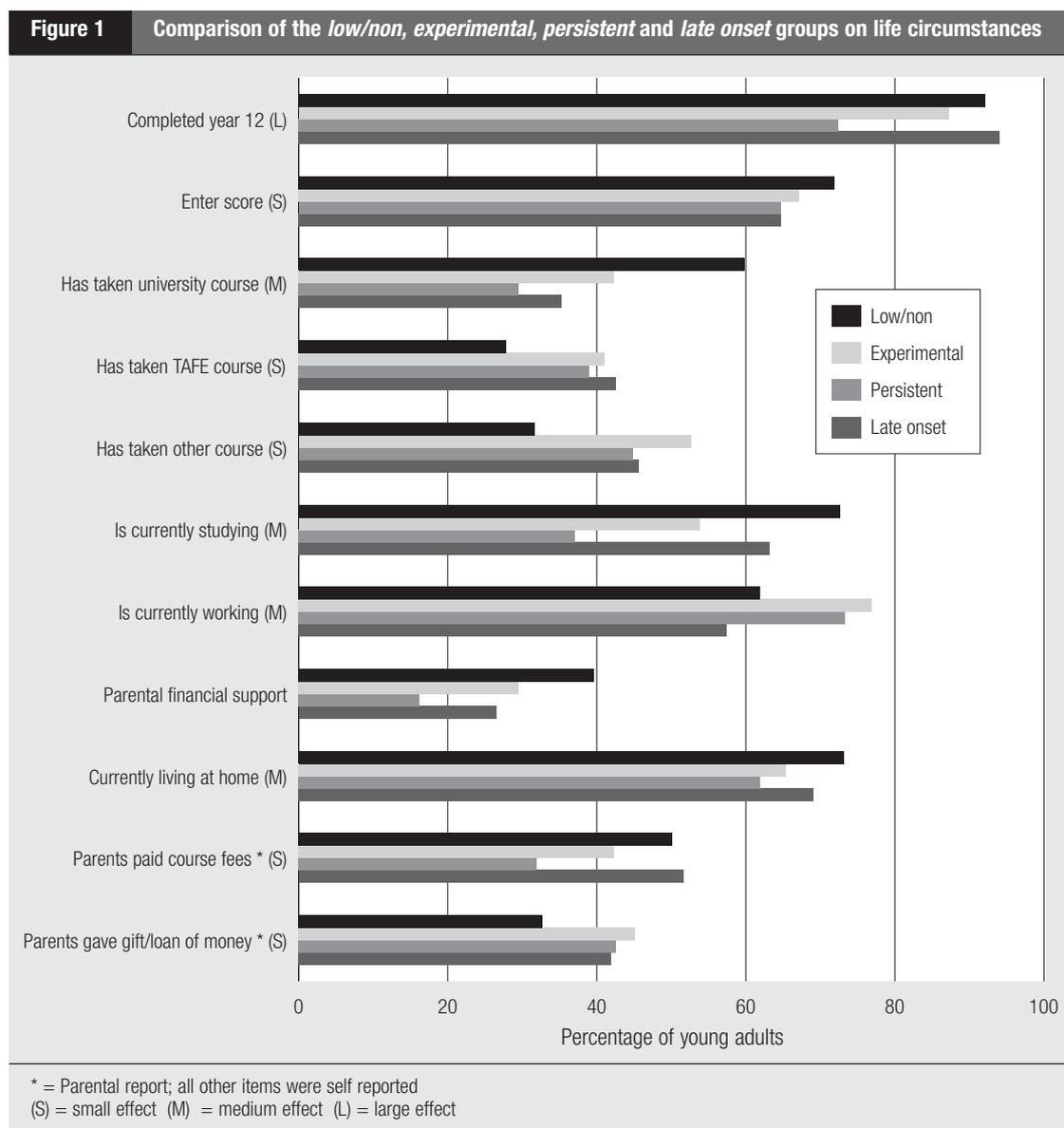
7 Individuals who displayed high levels of antisocial behaviour at 19-20 years were excluded from the low/non group, and placed in the *late onset* group.

8 Groups were compared using MANOVAs, with Scheffe post-hoc comparisons used to identify specific group differences. Chi square analyses were undertaken where required.

9 The z score transformation makes variables comparable, as it creates new variables which have the same midpoint and spread (all have a mean of 0 and a standard deviation of 1).

10 Effect sizes calculate the difference between group means, and then compare this difference score to the groups' combined standard deviations (i.e. they compare between-groups variability to within-groups variability). Cohen's (1988) cut-offs were used. For analysis of variance an effect size of .10 or greater represents a small effect, .25 a medium effect, and .40 a large effect. Effect sizes below .10 are weaker than a small effect (i.e. statistically significant but not particularly substantive).

undertaking further study, they were significantly less likely to have undertaken a university course of study, and, as Figure 1 shows, their tertiary entrance (Enter) scores were lower than the *low/non* and *experimental* groups. There was only one significant difference between the *low/non* and *experimental* groups, with the *experimental* group reporting higher rates of further study via private agencies, on the job training, Centrelink or similar agencies.



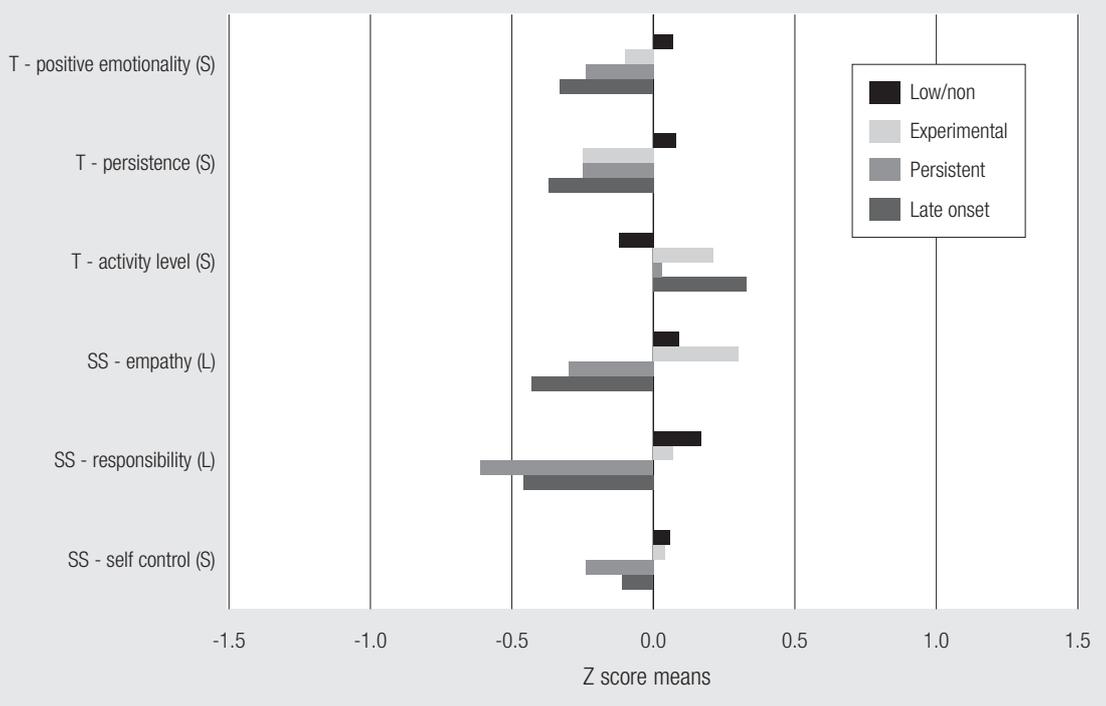
Group differences on individual attributes

Parents and young adults provided a very consistent picture of the four groups' individual attributes and capacities, as can be seen from Figures 2 and 3. Both concurred in rating *persistent* and *late onset* group individuals as having lower social skills, with powerful group differences particularly evident on empathic capacities and willingness to act responsibly (large effect sizes¹¹). In addition, *persistent* group individuals had significantly poorer self control by their own and parental ratings, and had greater difficulty in managing and controlling their emotions according to parents.

Likewise, the *persistent* and *late onset* groups tended to display more "difficult" temperament characteristics, although these group differences were less powerful, with most in the small effect size range. Thus, both groups tended to be typically less cheerful and happy, the *persistent* group was less able to stay on task and see activities through to completion, as well as being more volatile and moody, while the *late onset* group was perceived to be more active and fidgety. The *experimental* group closely resembled the *low/non antisocial* group on most individual attributes, although it was significantly higher on the activity temperament dimension. Interestingly, *experimental* group individuals tended to possess higher levels of empathy than *low/non antisocial* group individuals, according to both parental and self reports.

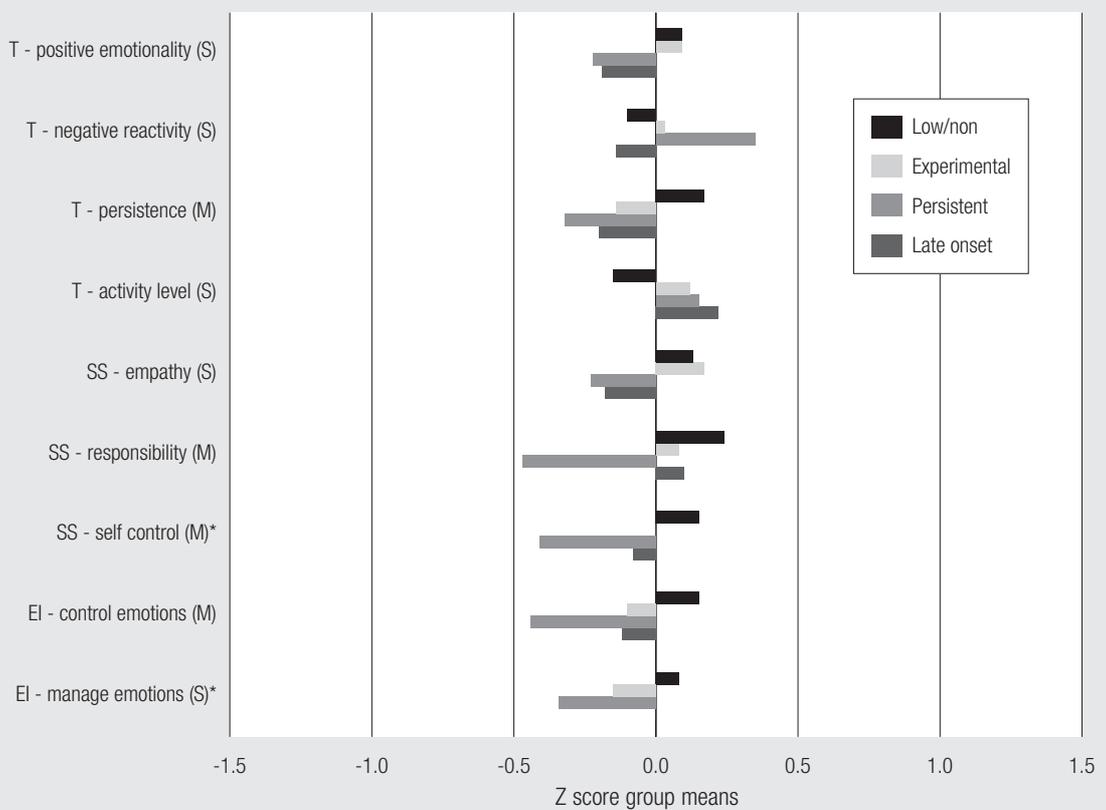
11 See explanation of effect sizes on page 13.

Figure 2 Comparison of the *low/non*, *experimental*, *persistent* and *late onset* groups on self-reported individual attributes at 19-20 years



T = aspect of temperament style SS = social skills aspect
 (S) = small effect (M) = medium effect (L) = large effect

Figure 3 Comparison of the *low/non*, *experimental*, *persistent* and *late onset* groups on parent-reported individual attributes at 19-20 years



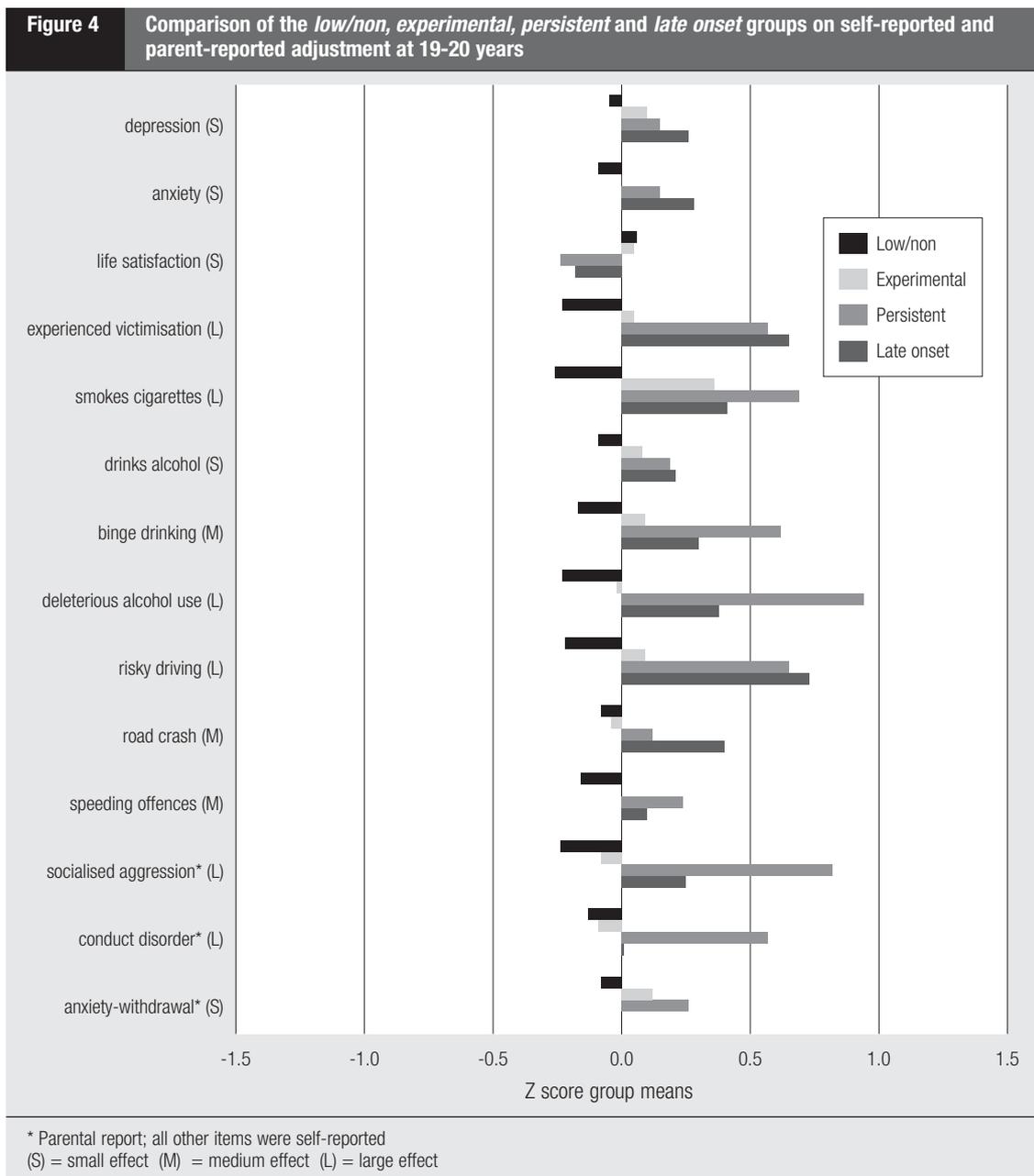
T = aspect of temperament style SS = social skills aspect EI = aspect of emotional intelligence
 (S) = small effect (M) = medium effect (L) = large effect

* Some group profiles appear to be missing (on self control and manage emotions). In these cases, the missing group means are zero, and hence not visible. This also occurs in Figures 4 and 5.

Group differences on adjustment

There were many significant differences between the *persistent* and *late onset* groups, on the one hand, and the *low/non* and *experimental* groups on the other, on the aspects of adjustment assessed (Figure 4). Aspects that particularly characterised both *persistent* and *late onset* group individuals were: binge drinking, harmful effects of alcohol use, having been a victim of crime, and a risky driving style. Group differences tended to quite powerful on most aspects, as evidenced by medium or large effect sizes.

The *persistent* group was notably more aggressive according to parental report, and reported they had more frequently been apprehended for speeding. The *late-onset* group had more frequently been involved in a road crash and were somewhat more anxious and depressed by their own self report. Both groups, as well as the *experimental* group, more frequently used cigarettes than the *low/non antisocial* group. On all other aspects there were no significant differences between the *experimental* and *low/non* groups.



Group differences on interpersonal relationships and community involvement

The *persistent* and *late onset* groups were found to have poorer interpersonal relationships and less positive attitudes towards police, courts and other social organisations than the *low/non* and *experimental* groups, as shown in Figures 5 and 6. Notably, the *late onset* group had the most problematic relationships with parents and friends, feeling that they received less support and that parents and friends viewed them more negatively. Additionally, the *persistent* and *late onset* groups reported more conflict with parents than the *low/non* and *experimental* groups.

The *persistent* group had notably higher rates of friendships with other antisocial youth according to parents and their own reports (this was also apparent for the *late onset* group), and were more often involved in romantic relationships with partners who also tended to engage in antisocial behaviour. Both the *persistent* and *late onset* groups expressed much lower confidence in the competence of police and courts, with the *persistent* group also feeling less trust in other types of social organisations (for example, governments, media, trade unions). Both groups also estimated the likelihood of apprehension for a criminal offence would be considerably lower than did the *low/non* and *experimental* groups. The group differences on these aspects were all relatively powerful, being in the medium or large effect size range.

The only significant difference found between the *experimental* and *low/non* groups was on the *experimental* group's greater propensity to have antisocial friends (by both parental and self report), although it should be noted that rates of such friendships were still quite low. Interestingly, the *experimental* group displayed the highest trust in organisations and confidence in the courts by comparison with the other three groups.

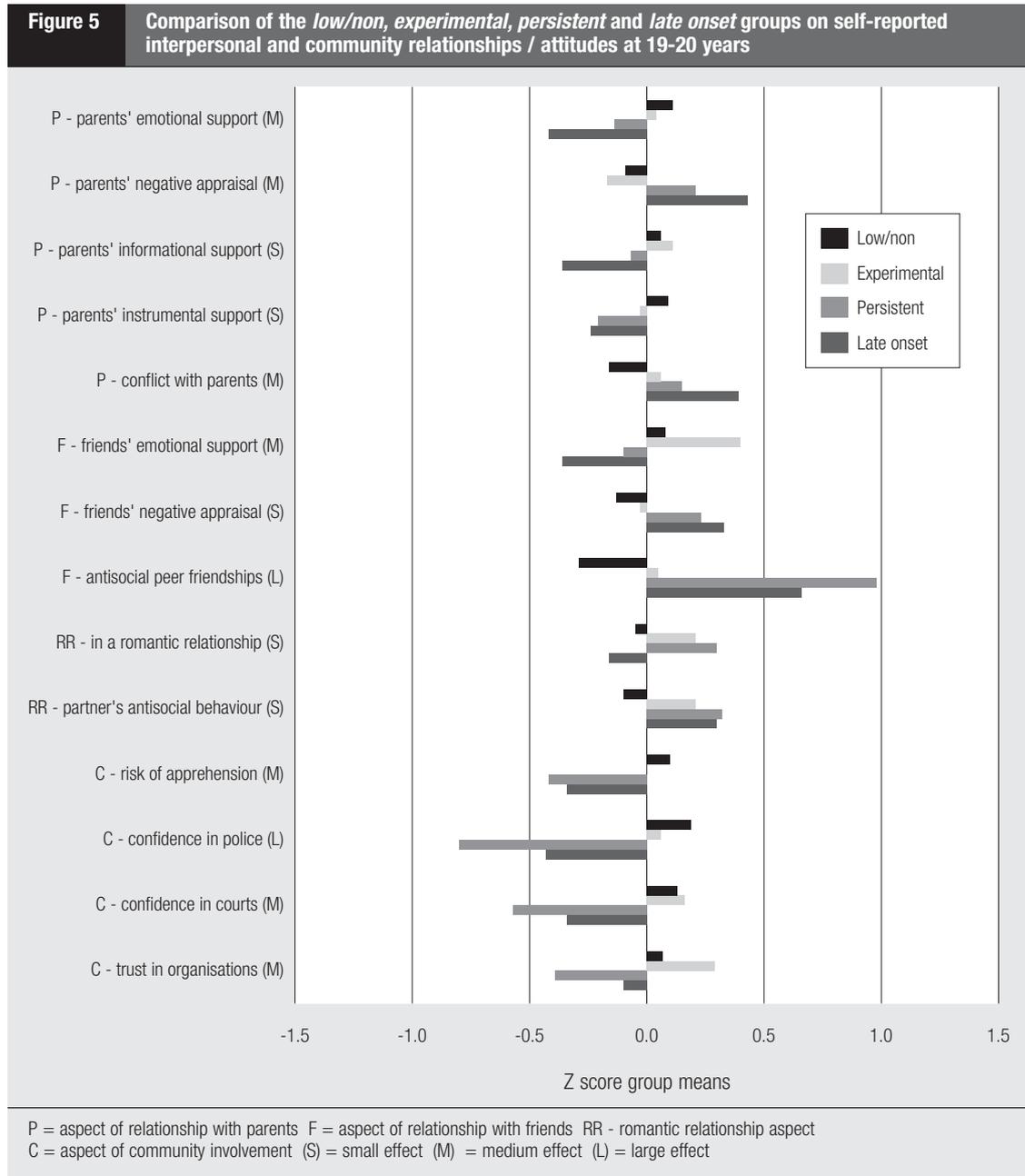
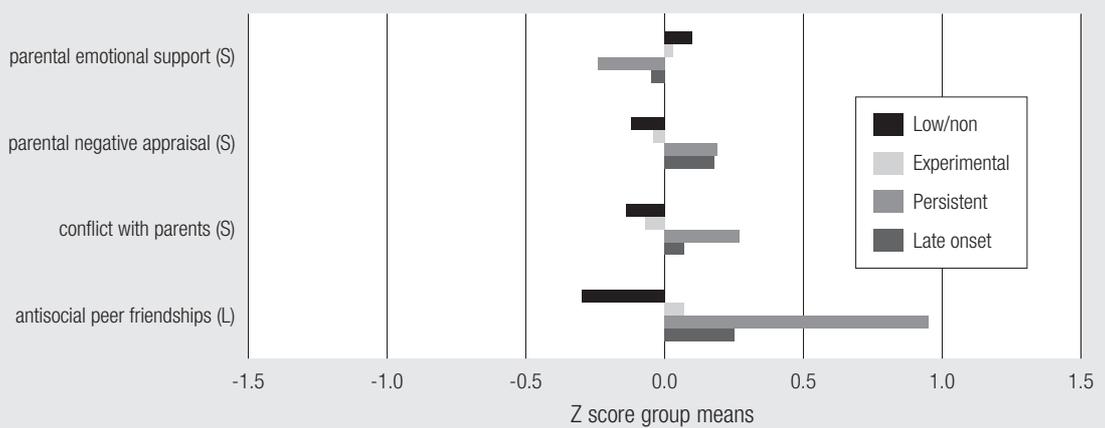


Figure 6 Comparison of the *low/non*, *experimental*, *persistent* and *late onset* groups on parent-reported interpersonal relationships at 19-20 years



(S) = small effect (M) = medium effect (L) = large effect

In summary, the *persistent*, *experimental*, *low/non* adolescent antisocial groups, and the *late onset* group, were compared, with the aim of investigating the long-term impact of adolescent antisocial behaviour on later functioning and wellbeing, and the factors which could have contributed to a change in the pathway of the *late onset* group. Four broad domains of functioning were investigated: life circumstances, individual attributes, adjustment, and interpersonal relationships/community involvement.

Overall, the *persistent* and *late onset* groups appeared to be experiencing more difficulties than the *experimental* and *low/non* groups, while the *experimental* group closely resembled the *low/non* group.

The *persistent* group was found to be faring significantly less well than the other three groups on most facets of life circumstances. Fewer had completed secondary school and were currently undertaking further study; they tended to have higher incomes but received less financial support from parents and fewer were living at home. While the *late-onset* group had high rates of secondary school completion, they had obtained lower tertiary entrance (Enter) scores than the *low/non* and *experimental* groups and were significantly less likely to have undertaken university study.

In terms of individual attributes, both the *persistent* and *late onset* groups were found to be less socially skilled than the *experimental* and *low/non* groups, according to their own and their parents' reports. In particular, their empathic capacities and willingness to act responsibly were less well developed. They also tended to display more "difficult" temperament characteristics, such as being less cheerful and happy, more volatile, less capable of seeing tasks through to completion, and more active and fidgety.

There were powerful differences between the *persistent* and *late onset* groups on the one hand, and the *experimental* and *low/non* antisocial groups on the other, on most aspects of adjustment. These differences encompassed alcohol and cigarette use, binge drinking and harmful effects of alcohol use, a risky driving style and involvement in road crashes, as well as being a victim of crime. Parents also rated *persistent* group individuals as being considerably more aggressive.

On interpersonal relationships and community involvement too, the *persistent* and *late onset* groups were significantly more problematic than the *experimental* and *low/non* groups. Notably, the *late onset* group tended to have the poorest relationships with parents and friends, while the *persistent* group had much higher rates of friendships with other antisocial youth. Antisocial peer friendships were also more common among the *late onset* and *experimental* groups than the *low/non* group. Both the *persistent* and *late onset* groups held more negative attitudes towards the police and courts, and believed there would be less chance of apprehension if criminal offences were committed.

Discussion and implications

This first section of the Third Report investigated three issues regarding the course and consequences of antisocial behaviour from adolescence to early adulthood:

- What is the continuity of antisocial behaviour from adolescence to early adulthood?
- Can a late onset group be identified, and if so, what are the correlates of this type of behaviour? Are transition experiences related to the onset of antisocial behaviour in early adulthood?
- What are the adult outcomes of adolescents who exhibited differing patterns of adolescent antisocial behaviour?

Conclusions and implications that may be drawn from the findings are now presented.

There was moderate continuity of antisocial behaviour from adolescence to early adulthood

Consistent with other studies, an overall decline in rates of antisocial behaviour from adolescence to early adulthood was found among this sample of young Victorians. This was particularly evident for most property and violent acts; however substance use, the selling of illegal drugs, and shoplifting remained stable from late adolescence to early adulthood. These findings confirm the normative trend reported elsewhere for antisocial behaviour to increase during early adolescence, peak at mid adolescence and then gradually decline (Baker 1998; Ross et al. 1994).

Three groups with differing across-time patterns of adolescent antisocial behaviour were followed forward in time to investigate their involvement in antisocial behaviour at 19-20 years. Moderate stability was found among those who had been persistently antisocial, with a majority (55 per cent) continuing to engage in high levels of antisocial behaviour in early adulthood. However, a sizeable minority of 45 per cent did not. Most of those who had engaged in antisocial behaviour only during early adolescence and desisted, or had never been involved in such behaviour in the adolescent years, did not engage in antisocial behaviour at 19-20 years.

There are several plausible explanations for the reduction in antisocial behaviour that occurred in early adulthood among some young people who had displayed persistent antisocial behaviour across adolescence. Firstly, they may have made a successful transition to adult life through finding secure, fulfilling employment, a change of living arrangements, or by forming a close attachment to a non-antisocial individual. This possibility was explored by comparing the sub-group of persistently antisocial adolescents who continued to engage in antisocial behaviour in early adulthood with the sub-group who did not. No significant differences between these two sub-groups were found on these aspects. Thus, it did not seem that the reduction in antisocial behaviour found was related to current life circumstances or experiences. Interestingly, in a somewhat different exploration of this issue, Paternoster, Brame and Farrington (2001) showed that after statistically controlling for adolescent levels of offending, no particular pattern of characteristics was associated with the propensity to offend over the period from early adulthood to 40 years of age. The study demonstrated strong continuity between adolescent and adult offending, and also suggested that post-adolescent experiences (such as a difficult transition) were not strongly related to the occurrence of adult offending.

A second explanation might be that the reduction in antisocial behaviour observed in the current study could simply reflect the natural life course of antisocial behaviour. As noted previously, antisocial behaviour appears to decrease from a peak at mid adolescence. Thus, the reduction found is consistent with normative developmental trends. Alternatively, as the sub-groups used were relatively small in size (57 and 47), the study may not have had sufficient power to detect subtle group differences. A fourth possibility is that 19-20 years is too early to detect emerging trends, or the influence of recent life events. It may also be that antisocial tendencies evolve into other forms of risk-taking and problematic behaviour in young adulthood, such as gambling, substance abuse, risky driving, or relationship difficulties.

Lastly, the reduction observed might be temporary. As noted earlier, few of the *persistent adolescent antisocial* group appeared to have entirely desisted from antisocial behaviour, and the majority had engaged in one or two antisocial acts in the last 12 months (lower than the cut-off of three or more different antisocial acts used in this study but still evident). As Cairns and Cairns (1999) point out, individuals tend to display greater across-time variability in behaviour than would be suggested by the literature and common statistical techniques. For example, even the most problematic adolescents in their Carolina Longitudinal Study were found to have one "good" year in which they displayed adequate adjustment, and almost all had experienced one extremely "bad" year among other "so-so" years. These findings serve as a reminder that more measurement points across a greater time span may be needed to identify stable, long-term trends in the current study.

Overall, these findings suggest that while persistent adolescent antisocial behaviour may be uncommon, once it becomes entrenched it tends to persist into early adulthood for many individuals, attesting to the long-term deleterious impact of this type of behaviour. While a decrease in antisocial behaviour in early adulthood was found among some individuals who had consistently engaged in such behaviour during adolescence, this trend did not seem to be associated with any particular life experiences or circumstances tapped in this study. It is possible that the trends will transpire to be temporary, and further data collections will be needed to identify long-term patterns of continuation and desistance.

A small late onset antisocial group was found, which had a distinct pattern of associated difficulties

A small group of individuals (N=68) was identified who first engaged in antisocial behaviour in early adulthood (or, for some, in late adolescence). Thus, a *late onset* developmental pathway seemed to be emerging, although it was quite rare. This finding is consistent with other studies which report the existence of a small late onset group (for example, Farrington 1994; Magnusson, Stattin and Duner 1983). To investigate whether particular life experiences and/or personal characteristics might have contributed to the development of late onset antisocial behaviour, the *late onset* group was compared to the *persistent*, *experimental*, and *low/non adolescent antisocial* groups.

In general, it did not seem that the *late onset* group experienced a more difficult transition to adulthood by comparison with the other groups. However, they had gained the lowest tertiary entrance scores, which may have impacted on their future expectations and limited their choice of a tertiary education course. Thus, fewer had undertaken a university course of study and more had studied at TAFE or another type of further education course than had individuals in the *low/non antisocial* group. As a group, they were no more likely to have experienced an unsettled employment or educational career, and did not feel under greater financial pressure. They also tended to be living at home, and receiving financial support from parents. Thus, it did not seem that difficulties in negotiating the transition to adulthood had played a role in the development of antisocial behaviour among this group.

Rather, the *late onset* group had the poorest relationships with parents and friends, perceiving that they received less support from them, that parents and friends viewed them more negatively, and that there was more conflict in their relationships with parents. Notably, they had higher rates of friendships with other antisocial youth. They were least often involved in a romantic relationship, had the highest levels of depression, and were more inclined to use and abuse alcohol, and to be risky drivers. They also tended to be less socially skilled and temperamentally more “difficult”.

Thus, problematic interpersonal relationships and adjustment difficulties were particularly characteristic of the *late onset antisocial* group, as well as some less adaptive personal attributes. These findings are consistent with those of Neighbours, Forehand and Bau (1997), who reported that concurrent, but not earlier conflict with parents was predictive of antisocial behaviour among young men. Overall it seemed that interpersonal relationship difficulties as well as psychosocial adjustment problems may have been particularly influential factors in the development of late onset antisocial behaviour.

However, these findings do need to be viewed cautiously. The measures of antisocial behaviour, interpersonal relationships, and adjustment were all taken at the same time point. Thus, it is not possible to establish whether adjustment or interpersonal relationship difficulties contributed to antisocial behaviour, or arose as a result of it. Across-time data are needed to clarify the direction of connections. Additionally, it will be important to keep following the progress of the *late onset* group into the future, to determine whether high levels of antisocial behaviour are maintained, and are associated with other types of problematic outcomes.

There were powerful differences in the adult outcomes of adolescents who displayed differing patterns of adolescent antisocial behaviour

The final question addressed was the early adult outcomes of individuals who had differing histories of adolescent antisocial behaviour. Thus, the *persistent, experimental* and *low/non*, as well as the *late onset*, groups were compared on four broad domains of functioning: life circumstances, individual attributes, adjustment and interpersonal relationships/community involvement.

The *low/non antisocial* group, which was by far the largest group (N=717, 73 per cent), was found to be progressing well in early adulthood. This group had the most positive outcomes on almost all aspects assessed. The *experimental* group (N=76, 8 per cent) resembled the *low/non* group, and was markedly different from the *persistent* (N=104, 11 per cent) and *late onset* (N=68, 6 per cent) groups over all domains of functioning. Thus, *experimental* adolescent antisocial behaviour did not seem to have a long-term impact on adjustment and wellbeing, at least at 19-20 years of age.

On the other hand, the *persistent* and *late onset* groups were both much more problematic than the *low/non* and *experimental* groups, with lower social skills a more “difficult” temperament profile, higher rates of substance use and abuse, risky driving behaviour, poorer interpersonal relationships, notably higher rates of antisocial peer friendships, and more negative perceptions of society.

It appeared that *persistent antisocial* group was on a pathway different from the other three groups. Fewer had completed secondary school, and only a minority were undertaking higher education. Thus, their future employment and career opportunities were likely to be curtailed, by comparison with the other groups. Additionally, this group displayed the highest levels of problems overall, such as substance use and abuse, and aggression. The *persistent antisocial* group's relationships with parents and friends were less warm and more conflictual. Particularly noteworthy, too, were their higher rates of friendships and romantic relationships with other antisocial young people. This group held the most negative attitudes towards police and courts and reported the least trust in social institutions. They were also lowest on aspects of social competence such as responsibility and self control.

Thus, the *persistent antisocial* group continued to experience the adjustment and interpersonal difficulties which had been evident throughout adolescence (see Vassallo et al. 2002). These findings highlight the continuing impact of persistent adolescent antisocial behaviour on adjustment, life opportunities and choices in young adulthood, which in turn may influence future opportunities and wellbeing. They also underline the importance of efforts to prevent the development of persistent antisocial behaviour in adolescence, which for many continues into adulthood and impacts negatively on their relationships, opportunities and wellbeing.

In conclusion, three issues were investigated: the continuation of *persistent* adolescent antisocial behaviour into adulthood, the emergence of a *late onset* antisocial group, and the relationship between differing patterns of adolescent antisocial behaviour and psychological and social functioning in young adulthood.

A majority of individuals who had engaged in *persistent antisocial* behaviour at multiple time points during adolescence continued to display such behaviour at 19-20 years (55 per cent). A considerable minority did not maintain high levels of such behaviour (45 per cent), although many reported some continuing lower frequency involvement. It did not seem that this decreasing involvement in antisocial behaviour was associated with any particular life experiences or circumstances, individual characteristics or interpersonal relationships.

A small *late onset* group was found (N=68). This group was compared to a *low/non antisocial* group who never exhibited high levels of adolescent antisocial behaviour (N=844); the *persistent* group who exhibited antisocial behaviour across adolescence (N=131); and an *experimental* group who engaged in antisocial behaviour in early adolescence and then desisted (N=88).

The *experimental* group closely resembled the *low/non* group at 19-20 years, and both groups appeared to be faring well. The *late onset* group did not appear to experience a more difficult transition in terms of their participation in work or study, but more frequently experienced interpersonal and adjustment difficulties. The *persistent* group was less likely to have completed secondary schooling and to be undertaking further study. This group was also more likely to display long-standing adjustment and interpersonal relationship difficulties, highlighting the long-term impact of persistent adolescent antisocial behaviour and the desirability of prevention and early intervention efforts to avert its development.

3



Connections between antisocial behaviour and victimisation

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Connections between antisocial behaviour and victimisation

To a significant extent, interest in adolescent antisocial behaviour has been motivated by the considerable harms, including personal injury, psychological distress and economic loss, often associated with such behaviour. Yet, while antisocial behaviour among young people is one of the most frequently researched areas of criminology and a major focus of crime prevention efforts, the issue of victimisation has been comparatively neglected (Finkelhor and Hashima 2001). One general finding is that those who engage in antisocial behaviour are also likely to experience victimisation (Rutter, Giller and Hagell 1998). Thus, as well as being responsible for more offences than those of older ages, young people also have the highest rates of victimisation (Macmillan 2001). The current section aims to investigate a number of questions regarding young people's experience of victimisation incidents, including:

- a) how frequently do young people experience victimisation?
- b) what are the connections between engagement in antisocial behaviour and the experience of victimisation?
- c) what additional factors are associated with victimisation? and
- d) how frequently are such incidents reported to police, and what are the reasons for not reporting?

Research into youth victimisation¹² and its consequences

Research findings based on both self-reported victimisation and official police statistics indicate that rates of victimisation are highest among young people. Self-report data collected by the Victorian Department of Justice (1999) indicate that in Victoria, victimisation rates are highest in the 15-24 years age group. This is particularly evident for rates of interpersonal/violent incidents (assault, sexual assault and robbery), which are highest for the 15-24 year age group (14.7 per cent) and decline markedly with age (for example, 2 per cent for those over 65 years). These trends are consistent with findings from elsewhere. For example, in the United Kingdom, officially recorded victimisation rates for interpersonal incidents show that, for both sexes, those in the 16-24-year age group are most at risk (Rutter et al. 1998). Similarly, in the United States, those under 24 years are also most likely to experience violent victimisation, with over one-third of murder victims being below the age of 25 years (Rutter et al. 1998).

Victimisation experiences can have deleterious consequences for individuals, especially children and adolescents (Macmillan 2001). Childhood and adolescence are critical periods in which the personal and psychological capacities that underpin emotional regulation, cognition and decision-making are developed (Caspi 1987). Victimisation has been found to affect personality development, impair mental health, cause psychological distress, and impact on educational and socio-economic attainment among young people (Macmillan 2001). Importantly, findings also indicate that the experience of victimisation is associated with the subsequent development of antisocial and criminal behaviour (Finkelhor and Hashima 2001; Macmillan 2001). These studies also found indirect links between victimisation and antisocial behaviour, through the impact of victimisation on other factors such as educational attainment (Macmillan 2001). There appears to be considerable complexity in the pathways between these two types of behaviours.

Factors associated with victimisation

Given the serious consequences of victimisation, attempts have been made to identify factors that predict risk of victimisation. It has been reported that the lifestyles and activities of different groups of individuals put them in environments or situations where they are more or less at risk of victimisation. One approach developed to explain the risk of victimisation has been termed the *routine activities* perspective (Lauritsen, Laub and Sampson 1992; Macmillan 2001; Miethe and Meirer 1994; Zhang, Welte and Wieczorek 2001).

According to Miethe and Meirer (1994), the routine activities approach highlights four distinct characteristics which heighten connections between lifestyle and victimisation risk: *exposure* to potential offenders, *proximity* to crime, *vulnerability* (factors which facilitate or weaken an individual's ability to withstand victimisation), and *attractiveness* as a target. Exposure refers to the degree to which an individual's lifestyle activities foster contact with potential offenders (including antisocial peers), while proximity refers to the physical distance between the locus of an individual's activities (e.g.. home or work) and areas frequented by offenders. Vulnerability is conceptualised as the degree to which the actions of victims or environmental characteristics (for example, intoxication or limited parental supervision) reduce an individual's capacity to defend against attack. Finally,

¹² The terms "victimisation" and "victim" are used in this Report to describe involvement in a limited range of victimisation incidents, primarily theft (for example, from a house or a car), or physical attack. They do not imply a prolonged history of exposure to such events, or to serious types of incidents such as sexual abuse. Thus, the terms are used in a relatively restricted way here.

attractiveness is conceptualised as the degree to which the individual's actions increase suitability for victimisation (for example, aggression which may provoke retaliation, or ownership of desirable possessions).

Thus, studies associated with the routine activities perspective have investigated the links between victimisation and the types of activities engaged in, the time and place where activities occur, as well as socio-demographic characteristics. For instance, using data from the British Crime Survey, various researchers have found a relationship between self-reported victimisation and activities such as the number of nights spent out of the home, the types of social entertainment engaged in, the modes of transport used, and the extent of alcohol use (Gottfredson 1984; Hough and Mayhew 1983; Sampson and Lauritsen 1994).

The routine activities perspective considers antisocial behaviour to be an important lifestyle dimension that contributes to victimisation (Sampson and Lauritsen 1994; Zhang et al. 2001). Engaging in illegal or antisocial activities can create additional opportunities for victimisation through exposure to antisocial peers, increased aggression toward other potentially antisocial individuals, or limited ability to defend oneself against attack due to intoxication or the effects of drug use (Lauritsen et al. 1992, Macmillan 2001). Research investigating the relationship between lifestyle activities and victimisation has found antisocial activities to be strongly associated with victimisation. For example, using self-reported victimisation data, Sampson and Lauritsen (1994) found that adolescent involvement in antisocial lifestyles strongly increased the risk of personal and property victimisation. Importantly, Esbensen and Huizinga (1991) found an association between the type of criminal activity engaged in and types of victimisation experienced. Violent offending was related to violent victimisation, while theft and other property offences were related to property victimisation. Other studies have found similar associations between types of antisocial behaviour and types of victimisation (Jensen and Brownfield 1986; Paetsch and Bertrand 1991; Zhang et al. 2001).

Explanations of victimisation - beyond Routine Activities

Although the routine activities perspective points to a considerable overlap between antisocial behaviour and victimisation, it is important to acknowledge that many victims do not participate in antisocial activities. The routine activities perspective has in fact been criticised for over-emphasising connections between antisocial activities and victimisation (Finkelhor and Asdigian 1996; Finkelhor and Hashima 2001). Moreover, Finkelhor and Hashima (2001) point out that routine activities theories were designed for and best explain stereotypical street crime such as assaults on strangers and robberies. Yet much victimisation, particularly that experienced by young people, is committed by acquaintances and family members. It is suggested that the routine activities perspective fails to adequately account for the interpersonal processes that are associated with acquaintance and intra-family victimisation.

On the other hand, theories developed to explain acquaintance and intra-family victimisation by and large ignore the lifestyle perspective and focus on a different set of correlates. For instance, theorists have noted that individuals who are targeted for bullying are often those with "avoidant-insecure" attachment relationships with caregivers, lack trust, are low in self-confidence, and are socially isolated (Olweus 1993; Smith, Bowers, Binney and Cowrie 1993). The literature on parental assault of children notes other risk factors, for example family and parental attributes such as family stress and isolation, and alcoholic and violent-prone caretakers, as well as youth characteristics such as gender, oppositional behaviour, difficult temperament, or psychological impairment (Garbarino 1989; Schellenbach and Guernsey 1987).

Although individual characteristics and attributes, as well as family environment factors, have mainly been used in research of child abuse and bullying, it is possible that these intra- and inter-personal factors may be relevant to the explanation of victimisation. Therefore, as well as considering the lifestyle/routine activities perspective, this current section also incorporates interpersonal factors in investigations of victimisation among young people. Such characteristics include those that compromise an individual's capacity to resist, prevent or deter victimisation (e.g., low self-confidence or psychological impairments) and those that may arouse the anger or destructive impulses in the offender (for example, oppositional behaviour). By considering factors arising from the routine activities perspective along with the interpersonal characteristics associated with intra-family and acquaintance victimisation, a more comprehensive and integrated understanding of victimisation may be gained (Finkelhor and Hashima 2001).

Reporting of victimisation experienced by youth

Comparison of self-reported victimisation and official police statistics on victimisation shows that much victimisation is not recorded in official statistics. Much of this is related to victims not reporting victimisation incidents to police (Rutter et al. 1998). The frequency with which young people report such incidents to police has been found to be particularly low in comparison to other age groups. For example, in Victoria, self-report victimisation data showed that only 24 per cent of 15-24 year old youth who experienced personal victimisation incidents reported these to police compared with 48 per cent of older adults who experienced such incidents (Victorian Department of Justice 1999).

Examination of the under-reporting of victimisation to police reveals a number of explanatory factors (Rutter et al. 1998). Under-reporting is related to the type of victimisation incident. For instance, self-reported victimisation data gathered by the Victorian Department of Justice showed that a high proportion of some property crimes (for example, motor vehicle theft - 97 per cent; burglary - 87 per cent) are reported to police. The reporting of such crimes is mandatory for insurance requirements (Rutter et al. 1998, Victorian Department of Justice 1999). In contrast, low proportions of personal victimisation incidents are reported

(assault - 30 per cent; sexual assault - 17 per cent; robbery - 47 per cent). Generally, it is well established that crimes that are less serious, in terms of injury and property loss, and crimes committed by acquaintances and family members are reported at lower rates (Victorian Department of Justice 1999; Finkelhor and Ormond 2000). Other factors also influence whether victimisation is reported. For example, Conaway and Lohr (1994) found that victims who had previous positive experiences with police were more likely to report, while females are much more likely to report personal victimisation than males (Finkelhor, Wolak and Berliner 2001).

Finkelhor and colleagues (for example, Finkelhor and Ormrod 2001; Finkelhor and Hashima 2001) have provided a useful outline of various factors that may influence young people not to report victimisation. One major factor concerns social definitions of victimisation. As the authors contend, often victimisation committed by youth is not considered as crime, but is viewed as "normal" youth misbehaviour or learning experiences. This may characterise the views held by parents, criminal justice agencies and the young people themselves. Other developmental issues may also influence reporting of youth victimisation. For instance, a wish to acquire independence from adults during adolescence may motivate young people not to report victimisation. Finally, young people's higher emotional sensitivity may cause them not to report in order to avoid the scrutiny of police or potential stigmatisation by peers.

This section investigates the following issues regarding youth victimisation:

- a) types and frequencies of victimisation experienced by 19-20 year old Victorian youths;
- b) connections between antisocial behaviour and victimisation, via the comparison of the frequency of victimisation among *highly antisocial* and *low/non antisocial* participants, as well as the frequency of antisocial behaviour among those who experienced victimisation and those who did not;
- c) the aspects of the routine activities and interpersonal perspectives that are related to victimisation, and whether the two perspectives apply differentially to *highly antisocial*, or *low/non antisocial*, victims; and
- d) rates of reporting victimisation to police and the reasons for not doing so.

Methodology

Participants

The data used in this current section come from 1140 participants (505 males and 635 females) who completed questionnaires during the Australian Temperament Project thirteenth data collection wave at 19-20 years of age in 2002.

Measures

The measures used include (a) self reported involvement in a victimisation incident; (b) self reported antisocial behaviour; and (c) aspects of personal functioning and environmental factors relevant to the routine activities and interpersonal perspectives.

Self-reported victimisation

At the 19-20 years survey wave, ATP participants were asked about their experience of victimisation incidents during the past twelve months. The six items used are shown in Table 2. Two items assessed interpersonal/violent incidents (events that involve interaction between the offender and victim, where the victim is subject to physical harm or threat of physical harm) and the remaining four items assessed property/non-violent incidents (events that involve loss of property, and generally do not involve physical harm to the victim).

Table 2 Assessment of victimisation experiences during the past 12 months	
Item	Category
■ Been physically attacked	interpersonal/violent
■ Been threatened with violence	interpersonal/violent
■ Had home burgled	property/non-violent
■ Had motor vehicle stolen	property/non-violent
■ Had contents of motor vehicle stolen	property/non-violent
■ Had something else stolen	property/non-violent

As well as asking whether particular types of victimisation had occurred, participants were also asked whether the victimisation incident had been reported to police. If a report had not been made, participants were asked their reasons for not reporting the incident. The following choices were available (participants could select as many items as they wished):

1. not important enough
2. too inconvenient
3. it was a private matter
4. police couldn't do anything
5. police wouldn't do anything
6. I dislike/fear police
7. afraid of what offender might do
8. didn't want offender to be in trouble
9. not insured
10. other (qualitative responses)

Self-reported antisocial behaviour

A summary of the questions used to assess antisocial behaviour at 19-20 years was provided earlier in Table 1, (page 10). All questions relate to participants' behaviour within the past twelve months, with the exception of those concerning substance use, which refer to the past month.

As described earlier (page 10) an index of frequent antisocial behaviour was used to categorise participants as *highly antisocial* or *low/non antisocial* at 19-20 years. Thus, those who engaged in three or more different types of antisocial acts during the past 12 months were classified as *highly antisocial*, while participants who committed fewer than three types of antisocial acts were classified as *low/non antisocial*.

Additionally, *highly antisocial* participants were classified according to the *type* of antisocial behaviour in which they engaged: *interpersonal/violent* or *property/non-violent*. Participants were classified as *violent* if they reported involvement in *one* or more of the following:

- Physical fighting
- Attacking someone with the intention of seriously harming them
- Attacking someone while a member of a group or gang
- Using force to get money or other goods from another person
- Having sex with someone against their will

Participants were classified as *non-violent* if they reported engaging in *two* or more of:

- Buying or selling stolen goods
- Breaking into a house in order to steal
- Damaging others' property
- Shoplifting
- Stealing from a person or a house
- Stealing a vehicle
- Stealing the contents of a vehicle

Antisocial participants who fit the criteria for *violent* and *non-violent* (N=49) were placed in the *violent* group. Using the above criteria, 44 antisocial participants were placed in the *non-violent* group (68 per cent of whom were male), and 93 antisocial participants in the *violent* group (71 per cent male).

Measures of routine activities and interpersonal victimisation perspectives

Table 3 presents the variables used in analyses investigating the correlates of victimisation. Variables deemed to be aspects of the routine activities or interpersonal victimisation perspectives were included in these analyses. The measures were briefly described on pages 11 to 12 (for further details see Appendix 1).

Table 3 Variables associated with the routine activities and interpersonal perspectives	
Routine activities	Interpersonal
<ul style="list-style-type: none"> ■ Binge drinking (five or more standard drinks for males; three or more for females) ■ Marijuana use ■ Illicit drug use (hallucinogens, designer drugs, amphetamines, opiates) ■ Community engagement (e.g. participation in an election, attended a public meeting, voluntary or charitable work) ■ Group participation (e.g. sporting groups, environmental groups) ■ Employment status (employed or not employed) ■ Living circumstances (living at parental home or not) ■ In a romantic relationship ■ Education circumstances (studying or not studying) ■ Antisocial friendships ■ Size of friendship network ■ Antisocial partner ■ Quality of relationship with parents ■ Quality of relationship with friends 	<p><i>Temperament characteristics</i></p> <ul style="list-style-type: none"> ■ Reactivity ■ Flexibility ■ Sociability ■ Distractibility ■ Persistence ■ Positive emotionality ■ Activity <p><i>Social skills</i></p> <ul style="list-style-type: none"> ■ Empathy ■ Responsibility ■ Self-control ■ Assertiveness <p><i>Mental health problems</i></p> <ul style="list-style-type: none"> ■ Depression ■ Anxiety ■ Stress

FINDINGS

Rates of victimisation

Of the 1140 ATP study participants included in these analyses, 361 (32 per cent) reported experiencing at least one victimisation incident during the past 12 months. For male participants, 36.5 per cent reported at least one such incident during the past 12 months, while rates were significantly lower among females at 28 per cent.¹³

Figure 7 shows the proportions of young men and women, and of the entire sample, who reported experiencing each of the six types of victimisation incidents. As can be seen, the incidence of threats of violence, having the contents of a motor vehicle stolen or something else stolen were most common, with between 10–13 per cent of ATP participants reporting the experience of these types of incidents in the last twelve months. Approximately 7 per cent had experienced a physical attack. Fewer (under 4 per cent) reported having their home burgled, or their motor vehicle stolen. More males than females experienced interpersonal/violent incidents (physical attacks, and threats of violence). Rates of home burglary, theft of a motor vehicle or its contents, and having something else stolen were similar across the sexes.

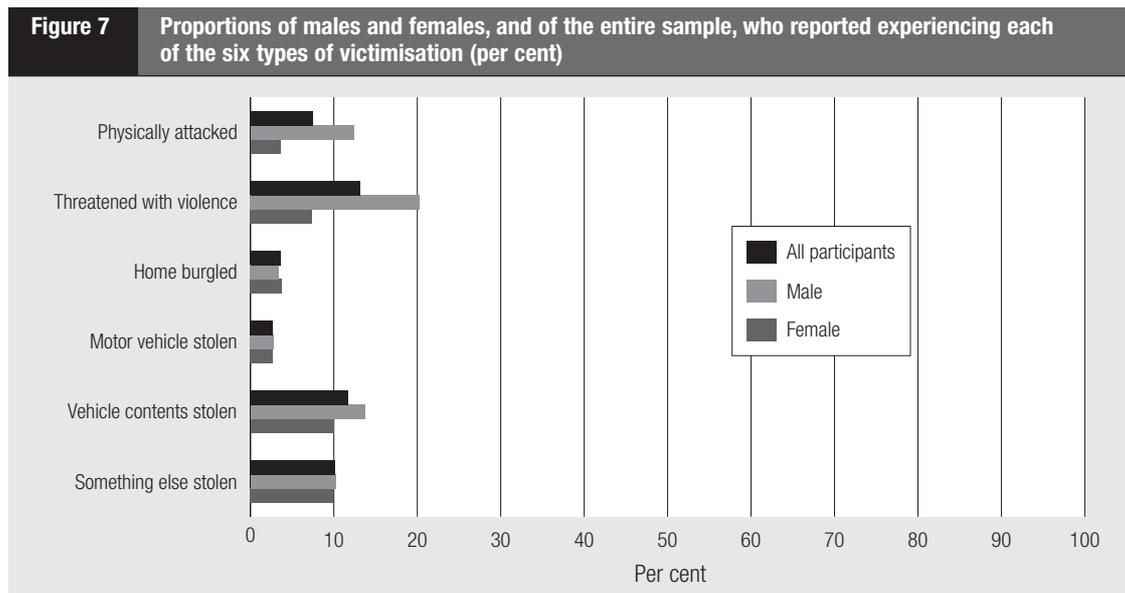
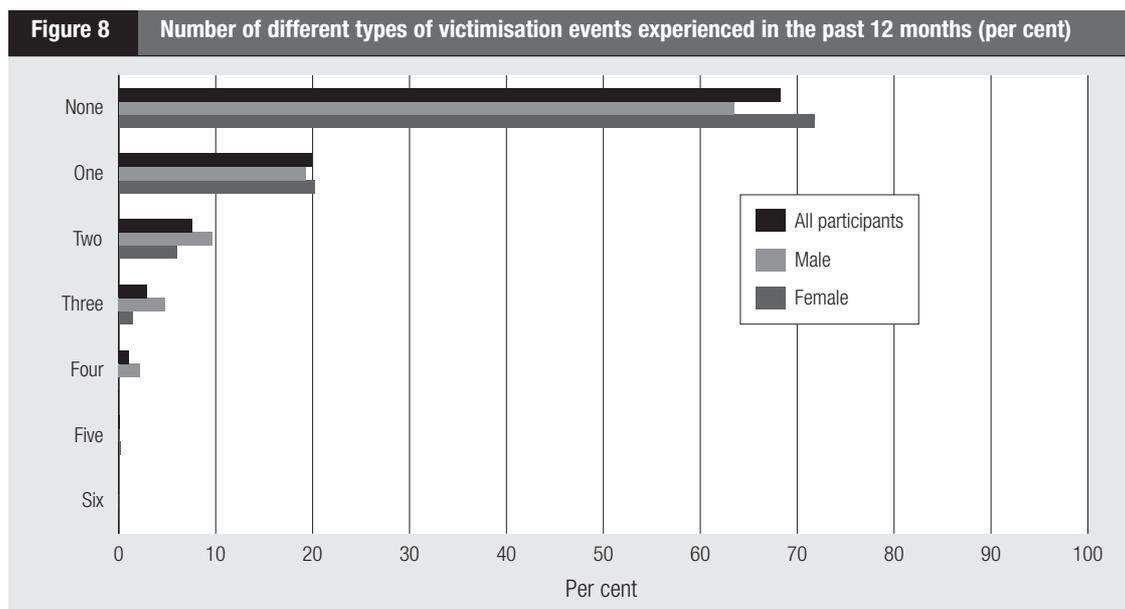


Figure 8 displays the total number of different types of victimisation incidents experienced in the past twelve months. Approximately 20 per cent of young people had experienced one type of victimisation in the past year. Very few had experienced three or more different types of victimisation. Higher proportions of males than females reported experiencing multiple types of victimisation events in the past year.¹⁴



¹³ Chi-square (1) = 9.43. $p < 0.01$.

¹⁴ Chi-square (1) = 24.61. $p < 0.01$.

In summary, one-third of individuals aged 19-20 years had experienced victimisation in the past twelve months, with threats of violence, having the contents of a motor vehicle stolen and something else stolen the most common types of events. Most young people (approximately 20 per cent of all participants, and approximately 63 per cent of those involved in a victimisation incident) experienced only one type of victimisation. More males than females had experienced victimisation, especially interpersonal/violent incidents, and males also were most likely to have experienced multiple types of victimisation.

Relationship between victimisation and antisocial behaviour

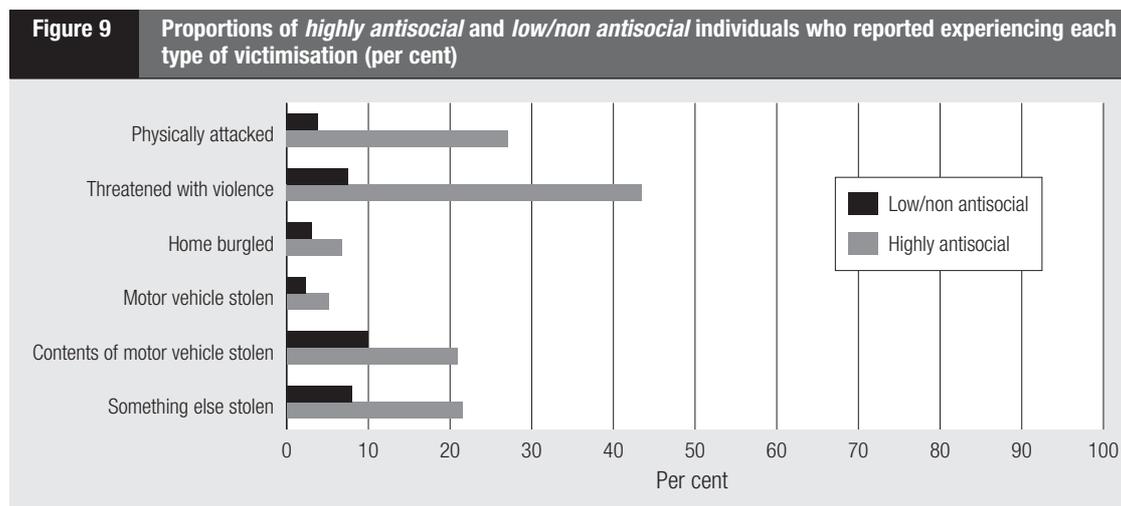
Connections between antisocial behaviour and victimisation were investigated firstly, by comparing rates of victimisation among young people who were *highly antisocial* at 19-20 years with the rates for those who were *low/non antisocial* at this age; and secondly, by investigating the frequency of antisocial behaviour among young people who had been a victim of crime compared with those who had not been victimised.

The frequency of victimisation among highly antisocial and low/non antisocial young people

As Table 4 indicates, significantly more *highly antisocial* individuals had experienced victimisation during the past 12 months than had *low/non antisocial* individuals (66.7 per cent compared with 25.3 per cent).¹⁵

	Experienced victimisation	Did not experience victimisation
Highly antisocial	66.7 per cent (N = 118)	33.3 per cent (N = 59)
Low/non antisocial	25.3 per cent (N = 248)	74.7 per cent (N = 732)

The question of whether *highly antisocial* and *low/non antisocial* individuals experienced different types of victimisation was explored by comparing these two groups on the occurrence of the six types of victimisation incidents, (Figure 9). As can be seen, the frequencies of all types of incidents were higher among *highly antisocial* individuals than among *low/non antisocial* individuals. This difference was greatest for interpersonal/violent events (physical attack and threats of violence). Interestingly, most *low/non antisocial* victims only experienced property type of incidents (64 per cent), while most *highly antisocial* victims experienced violent only, or violent *and* property incidents (74 per cent).¹⁶



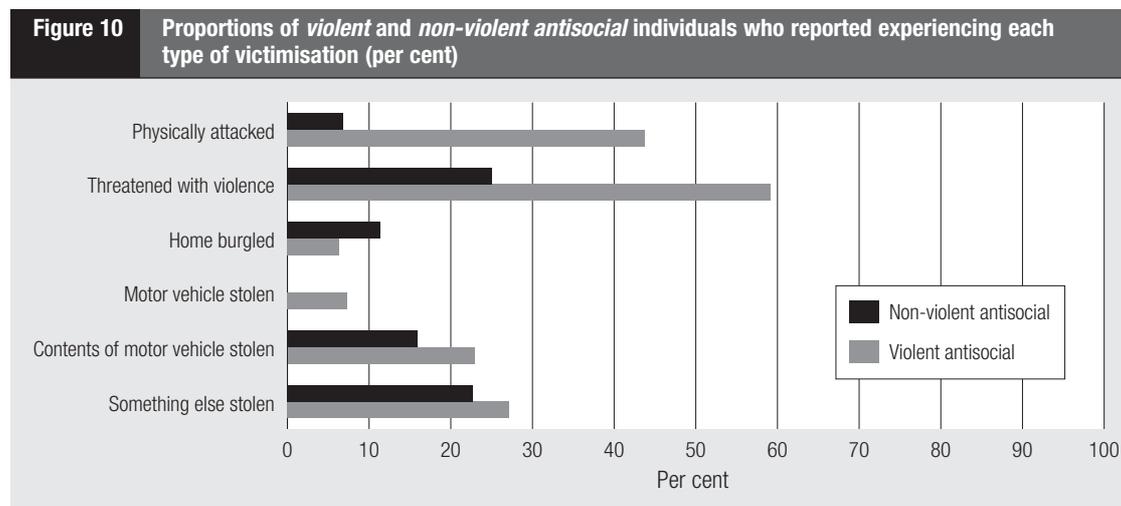
The next issue addressed was whether *violent* antisocial individuals (N=93) more frequently experienced victimisation incidents, and different types of incidents, than *non-violent* antisocial individuals (N=44). *Violent* antisocial individuals were significantly more likely to have been involved in a victimisation incident in the past twelve months than *non-violent* antisocial individuals (76 per cent compared with 57 per cent).¹⁷ Furthermore, as shown in Figure 10, there were differences in the

¹⁵ Chi-square (1) = 117.94 p<0.01.

¹⁶ Chi-square (1) = 45.76 p<0.01.

¹⁷ Chi-square (1) = 5.31 p<0.05.

type of incidents that these individuals were involved in, with significantly higher rates of interpersonal/violent victimisation among *violent* antisocial individuals than among *non-violent* antisocial individuals. In fact, *violent* antisocial participants, who comprised 8 per cent of the total sample, made up 35.6 per cent of those who had experienced violent/interpersonal victimisation.



Rates of antisocial behaviour among those who had experienced victimisation and those who had not

The second approach to investigating the relationship between antisocial behaviour and victimisation is to explore whether individuals who experienced victimisation (hereafter termed “victims”) more frequently engaged in high levels of antisocial behaviour, than those who had not been a victim of crime (termed “non-victims”). Table 5 shows that victims were significantly more likely to have engaged in high levels of antisocial behaviour than non-victims in the past 12 months (32.7 per cent and 7.6 per cent, respectively). Nevertheless, the converse of this finding is that two-thirds of those who were involved in a victimisation incident were not *highly antisocial* (67.3 per cent), while over 90 per cent of non-victims had not been *highly antisocial*.

Table 5 Percentage of 19-20 year old victims and non-victims who did, or did not, engage in high levels of antisocial behaviour in the past 12 months

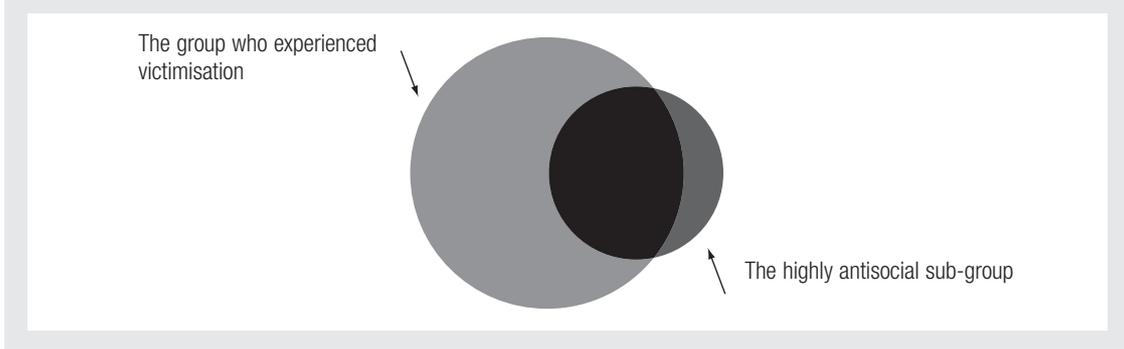
	Highly antisocial	Low/non antisocial
Victims	32.7 per cent (N = 118)	67.3 per cent (N = 243)
Non-victims	7.6 per cent (N = 59)	92.4 per cent (N = 720)

In summary, the comparison of rates of victimisation among *highly antisocial* individuals and *low/non antisocial* individuals revealed that *highly antisocial* individuals more often experienced victimisation, as well as each particular type of victimisation. Especially noteworthy was the greater occurrence of violent/interpersonal incidents among *highly antisocial* individuals. Most *low/non antisocial* individuals only experienced property incidents, while most *highly antisocial* individuals experienced violent only, or violent *and* property incidents. Among *highly antisocial* individuals, three-quarters of those who engaged in violent antisocial acts, and approximately half of those involved in non-violent antisocial acts, had also experienced victimisation in the past 12 months.

Examination of rates of antisocial behaviour among individuals who did, or did not, experience victimisation revealed that one-third of those experiencing victimisation had been *highly antisocial*, while less than 10 per cent of those who had not been a victim of crime engaged in high levels of antisocial behaviour.

The relationship between antisocial behaviour and victimisation was thus complex. On the one hand, most *highly antisocial* young people had experienced victimisation in the past 12 months. On the other hand, while victims were more likely to have engaged in high levels of antisocial behaviour than non-victims, the majority of young people who experienced victimisation had not been *highly antisocial* during the past 12 months. The relationship is shown in Figure 11.

Figure 11 Connections between victimisation and antisocial behaviour



Factors associated with victimisation

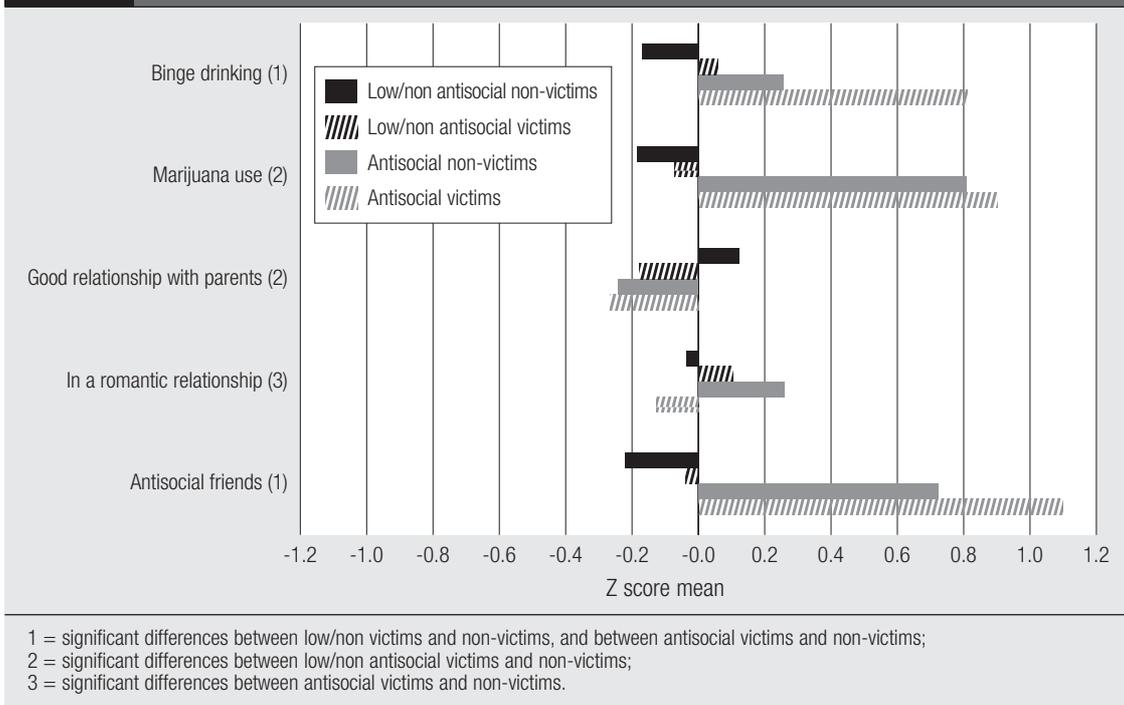
The previous sections revealed a strong relationship between engagement in antisocial behaviour and the experience of victimisation. However, while antisocial behaviour appears to be a strong risk factor for victimisation, the connections were far from perfect: 32.7 per cent of those who experienced victimisation were highly antisocial compared with 7.6 per cent of those who did not. In the next section, the characteristics and attributes other than antisocial behaviour which differentiate victims and non-victims are investigated. These characteristics and attributes are derived from the two theoretical perspectives of victimisation described earlier, the routine activities and interpersonal perspectives.

As outlined previously (page 30), there were clear differences in the victimisation experiences of *highly antisocial* and *low/non antisocial* participants. Most notably, most *low/non antisocial* victims only experienced property victimisation, while most *highly antisocial* victims experienced violent victimisation, or violent *and* property victimisation. To allow for the possibility that the factors which explain victimisation among *highly antisocial* individuals may be different from the factors which explain victimisation among *low/non antisocial* individuals, two types of comparisons were undertaken:

- a) *low/non antisocial* victims with *low/non antisocial* non-victims, and
- b) *highly antisocial* victims with *highly antisocial* non-victims

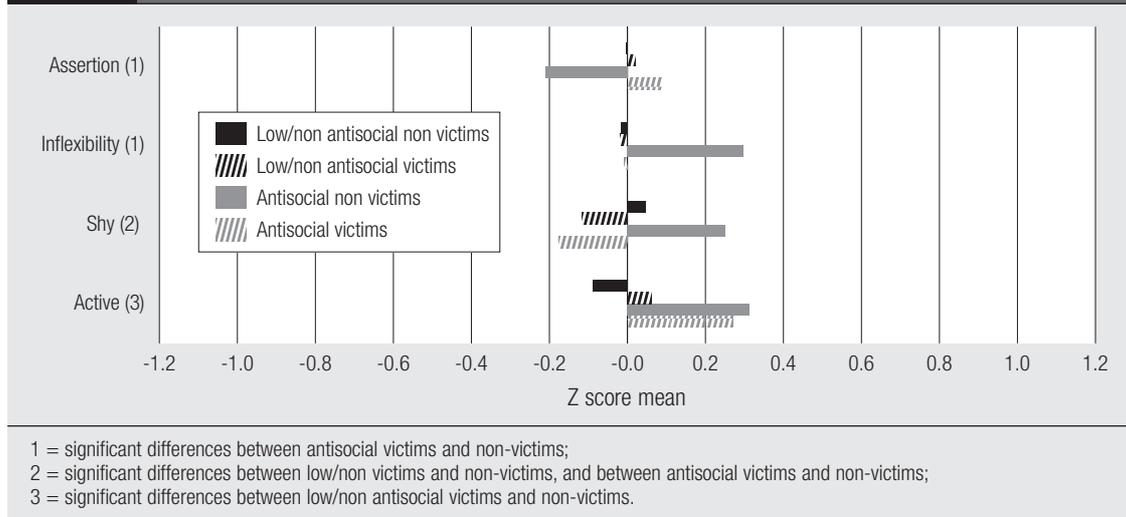
Two sets of logistic regression analyses¹⁸ were undertaken, using variables derived from the routine activities and interpersonal perspectives. The aspects on which significant differences between groups were found are displayed graphically in Figures

Figure 12 Variables derived from the routine activities perspective on which significant group differences were found



¹⁸ The two step approach recommended by Hosmer and Lemeshow (1989) was followed, whereby univariate analyses were first undertaken to identify variables which significantly differentiated between groups, which were subsequently included in the multivariate analyses.

Figure 13 Variables derived from the interpersonal perspective on which significant group differences were found



12 and 13, respectively. It should be noted that for reader ease, these figures show all four groups - *low/non antisocial* victims and non-victims, and *highly antisocial* victims and non-victims - although two separate sets of analyses were undertaken. Details of the findings from the statistical analyses and the odds ratios¹⁹ are provided in Appendix 3.

As Figures 12 and 13 show, there were marked differences between the *low/non antisocial* and *highly antisocial* groups on several aspects, irrespective of whether or not victimisation was experienced. For example, while friendships with antisocial peers differentiated between both types of victims and non-victims, rates of such friendships were generally low among *low/non antisocial* youth and relatively high among *highly antisocial* youth. Likewise binge drinking and marijuana use strongly differentiated between *low/non antisocial* and *highly antisocial* youth overall.

Aspects which differentiated *highly antisocial* individuals who had been victims of crime from their highly antisocial counterparts who had not, are next described.

Factors associated with victimisation among highly antisocial individuals

Firstly, several facets of the routine activities perspective differentiated *highly antisocial* victims and non-victims. Thus, *highly antisocial* victims more often reported friendships with other antisocial youth²⁰ (friends who were aggressive, antisocial, and/or used drugs), and higher levels of binge drinking, than *highly antisocial* non-victims. However, as noted previously, while there were significant differences on these aspects, rates of antisocial peer friendships and of binge drinking were relatively high among both groups of antisocial youth, especially when compared to *low/non antisocial* individuals. Highly antisocial individuals who were involved in a romantic relationship were less likely to have been a victim of crime. Secondly, in terms of the interpersonal perspective, *highly antisocial* victims were temperamentally more flexible and assertive in social situations than non-victims, while a shy temperamental style was more characteristic of antisocial youth who did not experience victimisation. The multivariate analysis revealed that friendship with antisocial peers²¹ was the sole significant contributor to differences between victims and non-victims among *antisocial* individuals.

Aspects that distinguished between *low/non antisocial* individuals who had, or had not, been a victim of crime, are next described.

19 The odds ratio for a variable is the change in the odds of being in the outcome group (for example, being a victim) for each change in the level of that variable. An odds ratio of 1 for a variable represents no change in risk (odds are the same) at any level of that variable. Odds ratios significantly greater than 1 indicate an increased risk at increased levels of that variable, whilst odds ratios less than one indicate a reduced risk at higher levels of the variable.

It should also be noted that the size of the odds ratio is related to the number of data points in a variable's distribution. As the variables in our data set have differing distributions, comparison of odds ratios across variables is not straightforward, and the significance levels should also be inspected.

20 Odds Ratio (antisocial friends) = 1.47

Odds Ratio (binge drinking) = 1.44

Odds Ratio (romantic r/ship) = .67

Odds Ratio (flexibility) = .71

Odds Ratio (shy) = .52

Odds Ratio (assertion) = 1.36

21 Multivariate Odds Ratio (antisocial peers) = 1.55

Factors associated with victimisation among low/non antisocial individuals

In terms of the routine activities perspective, *low/non antisocial* victims were found to have significantly higher rates of friendships with antisocial peers²² and were more likely to binge drink and use marijuana than *low/non antisocial* non-victims. *Low/non antisocial* individuals who had not been a victim of crime more often had a high quality relationship with parents. In terms of the interpersonal perspective, *low/non antisocial* victims were found to be temperamentally more active than non-victims, while those who had not been a victim of crime more often displayed a shy temperament style, suggesting that this attribute was protective against victimisation.

The multivariate analysis²³ showed that the quality of the young adults' relationships with parents²⁴ was the most powerful contributor to differences between *low/non antisocial* victims and non-victims. Aspects of temperament style, particularly activity and shyness, also emerged as important.

Comparison of the Routine Activities and Interpersonal perspectives

Table 6 summarises the aspects of the routine activities and interpersonal perspectives on which statistical differences between groups were found via the univariate analyses. As can be seen, two facets of the routine activities perspective (antisocial peer friendships, and binge drinking) characterised both types of victims (*low/non* and *highly antisocial*). In addition, two aspects from the routine activities perspective (poor relationship quality with parents, and marijuana use) characterised *low/non antisocial* victims, while one aspect (not in a romantic relationship) characterised *highly antisocial* victims. One aspect consistent with the interpersonal victimisation perspective (an active temperament style) characterised *low/non antisocial* victims, while a flexible temperament style and assertiveness characterised *highly antisocial* victims. Additionally, both types of victims tended to temperamentally more outgoing. However, on the whole, the multivariate analyses suggested that the routine activities perspective was more closely related to victimisation than the interpersonal perspective.

Table 6	Aspects of the routine activities and interpersonal perspectives on which there were significant differences between low/non antisocial, highly antisocial, and both types, of victims and non-victims		
	<i>Low/non antisocial</i> victims vs. non-victims	<i>Highly antisocial</i> victims vs. non-victims	Both <i>low/non antisocial</i> and <i>highly antisocial</i> victims vs. non-victims
Routine activities	<ul style="list-style-type: none"> ■ Relationship with parents ■ Marijuana use 	<ul style="list-style-type: none"> ■ In a romantic relationship 	<ul style="list-style-type: none"> ■ Antisocial peer friendships ■ Binge drinking
Interpersonal	<ul style="list-style-type: none"> ■ Active temperament 	<ul style="list-style-type: none"> ■ Flexible temperament ■ Assertive 	<ul style="list-style-type: none"> ■ Shy temperament

In summary, both the routine activities perspective and the interpersonal victimisation perspective revealed several significant predictors of victimisation when univariate analyses were undertaken. However, the multivariate analyses suggested that in this study, the variables that most powerfully differentiated between victims and non-victims came from the routine activities perspective. Thus, the existence of antisocial peer friendships was the sole significant differentiator between *highly antisocial* individuals who had, or had not, been involved in a victimisation incident, while the quality of young adults' relationships with parents contributed most powerfully to differences between *low/non antisocial* victims and non-victims.

Rates of reporting victimisation incidents to police, and the reasons for not reporting

As well as asking about the frequency of victimisation, participants were also asked whether the incident had been reported to police, and the reasons for not reporting the incident. Overall, of 361 victims, 50 per cent reported a victimisation incident to police. This figure is approximate and may not be an entirely accurate portrayal of the number of incidents reported to police,

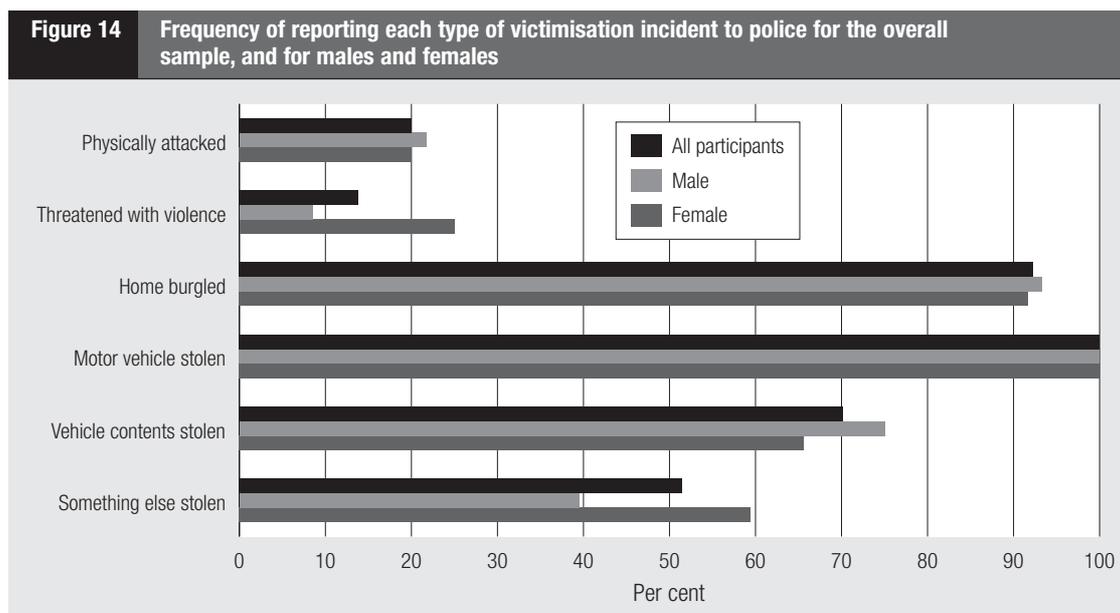
22 Odds Ratio (antisocial peers) = 1.25
 Odds Ratio (binge drinking) = 1.32
 Odds Ratio (marijuana use) = 1.24
 Odds Ratio (quality of r/ship with parents) = .76
 Odds Ratio (activity) = 1.16
 Odds Ratio (shy) = .85

23 It is important to note that in multivariate models, odds ratios are adjusted to control for association with other variables in the analysis. This attempts to more 'realistically' assess the risk represented by controlling for the effect of other variables which are related. One can think of multivariate odds ratios as meaning 'all else being equal, a unit increase on this variable raises the odds by x'.

24 Multivariate Odds Ratio (antisocial peers) = 1.25
 Multivariate Odds Ratio (activity) = 1.18
 Multivariate Odds Ratio (shy) = .79

for two reasons. Firstly, if an individual experienced several types of victimisation, the report of just one type of incident to police led to that individual being classified as “having reported victimisation to police”, even though she/he may have reported multiple types of victimisation. Secondly, as participants were only asked whether a particular type of victimisation had been experienced and reported, rather than the number of these incidents reported, we do not know precisely how many victimisation experiences of each particular type were reported to police.

Bearing these cautions in mind, Figure 14 displays, for each type of victimisation, the overall sample rate of reporting to police and the rates of reporting for males and females. For violent/interpersonal incidents, the overall reporting levels were quite low, ranging from 13 to 22 per cent. On the other hand, high proportions of home burglaries, theft of motor vehicles and theft of motor vehicle contents were reported, perhaps because such events are often associated with insurance claims. The figure also shows that females reported threats of violence and other kinds of theft more frequently than males, but reported other types of victimisation at similar rates to males.



Next, the rates of report among *low/non antisocial* and *highly antisocial* individuals are shown in Table 15. There was a small, but generally non-significant, trend for *low/non antisocial* individuals to report most types of victimisation to police more frequently than *highly antisocial* individuals, with the exception of reporting the theft of motor vehicle contents and home burglary, which was slightly greater among *highly antisocial* individuals.

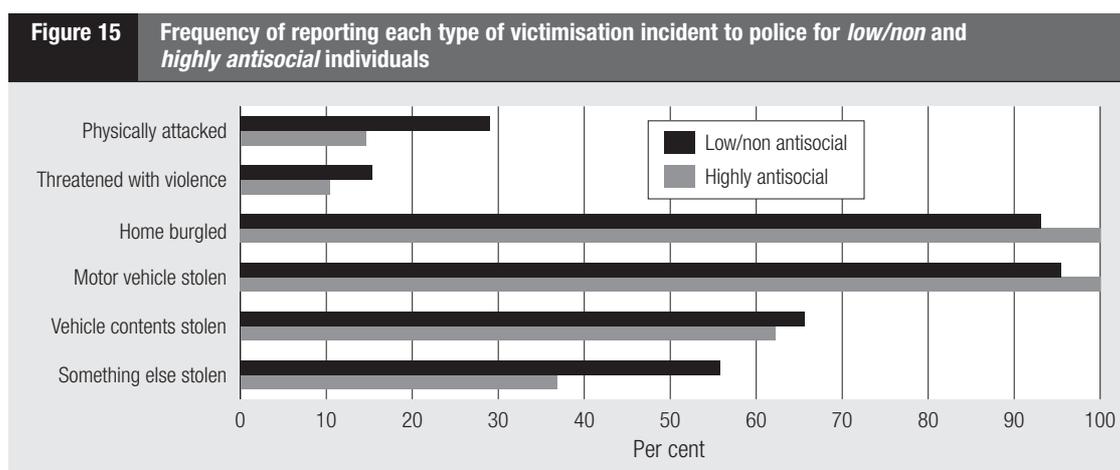


Figure 16 summarises the reasons given for victimisation not to be reported to police by the overall sample, and by males and females. For succinctness, the types of reasons were consolidated into three categories: low importance/privacy (i.e., not important enough, private matter, too inconvenient), negative attitudes towards the police (i.e., belief that the police would/could not do anything, dislike/fear of police) or concerns related to the offender (fear of reprisal, did not want the offender to get into trouble). It should be noted that as the reasons for not reporting may relate to more than one type of victimisation incident, the type of reason given cannot be aligned with the type of victimisation experienced.

Participants were able to choose multiple reasons, hence the percentages do not add to 100 per cent. As shown in Figure 16, about two-thirds of those who did not report victimisation to police gave reasons of lack of importance or privacy. Close to half of those who did not report victimisation identified negative attitudes toward the police as a relevant factor. Almost ten per cent cited concerns about the offender. Similar proportions of males and females gave reasons of low importance or privacy, and negative attitudes towards the police. While females were almost twice as likely as males to give reasons related to concerns about the offender, this difference did not reach statistical significance, perhaps because these reasons were chosen relatively rarely.

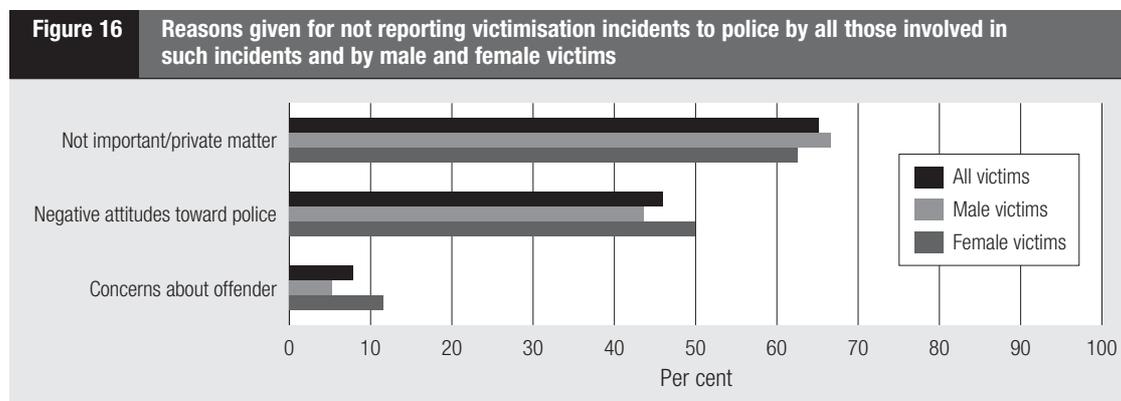
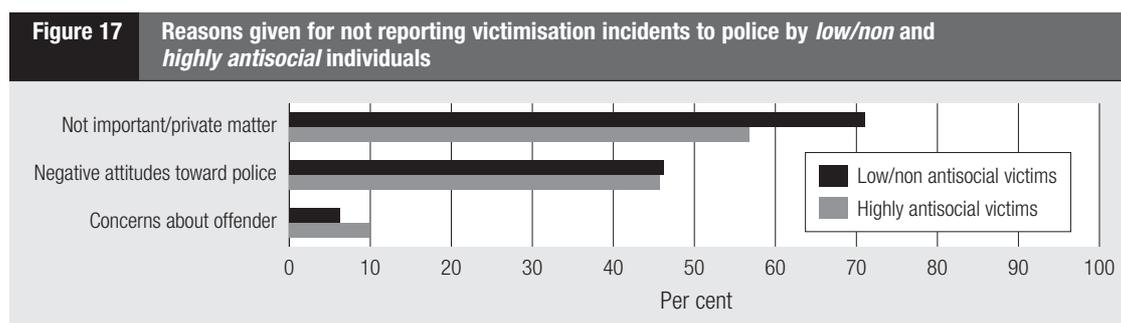


Figure 17 displays the reasons given by *low/non antisocial*, and *highly antisocial* victims for not reporting. There was a clear but non-significant trend for *low/non antisocial* victims to cite reasons of low importance/privacy more frequently in their decision not to report. Reasons relating to negative attitudes towards police and concerns about the offender were cited equally often by *low/non antisocial* and *highly antisocial* victims.



In summary, of 361 individuals who had experienced victimisation in the last 12 months, approximately half had contacted police to report such an incident. For violent/interpersonal victimisation events, the overall reporting levels were low ranging from 13 to 22 per cent. Rates were higher for other types of victimisation events, ranging from 60 to 100 per cent. Females reported threats of violence more frequently than males, while there were no significant differences in the rate of report between *low/non antisocial* and *highly antisocial* individuals.

About two-thirds of those who did not report victimisation to police gave reasons of low importance or privacy, while close to half identified negative attitudes toward the police as a relevant factor. Approximately ten per cent of victims cited concerns about the offender. There were no significant sex differences, nor was there a differences between *low/non antisocial* and *highly antisocial* individuals, in the reasons cited for not reporting victimisation.

Discussion and implications

Overall, approximately one-third of the 19-20 year olds surveyed had experienced victimisation during the previous twelve months. The most frequent type of incident reported was being threatened with violence, followed by theft from a motor vehicle and another type of theft. Two-thirds of *highly antisocial* individuals had experienced victimisation (antisocial behaviour → victimisation). Furthermore, those who were prone to violent antisocial behaviour were also very likely to experience violent victimisation. However, it was also found that the majority of young people who experienced victimisation were not highly antisocial (victimisation → antisocial behaviour).

Aspects of the routine activities perspective most strongly predicted victimisation. Attributes such as temperamental shyness and activity, which were associated with the interpersonal perspective, also appeared important. Approximately half of the

victimisation incidents had been reported to police. Rates of reporting to police were low for violent/interpersonal incidents but relatively high for property theft. Two-thirds of victims who did not report the incident to police believed that it was not important enough, and half cited negative views of the police.

These findings help to clarify the connections between antisocial behaviour and victimisation, and have a number of important implications for crime prevention strategies.

Extent and impact of victimisation at 19-20 years of age

High rates of victimisation were found among young people aged 19-20 years, with one in three reporting having been a victim of crime in the previous 12 months. One message from these findings is that victimisation of young people is relatively common, yet remains a largely unrecognised problem with unknown consequences.

Comparing the frequency of assault among ATP participants with that of the 15-24 year old sample from the Victorian Crime Victimization Survey (VCVS 1999), rates were found to be similar for females (around 3 per cent), but rather different for males. Males in the ATP sample were almost twice as likely to have been physically attacked than males in VCVS sample (12.1 per cent compared with 7.2 per cent). This may be due to the inclusion of slightly older young adults in the VCVS study, as several studies have shown that rates of victimisation tend to decrease in adulthood (Hashima and Finkelhor 1999; Kilpatrick 1992; Moore 1994). This comparison suggests that the trends found in the ATP study are reasonably representative.

Young men were more likely to experience victimisation than young women. There was also a difference in the types of victimisation experienced, suggesting that there may be different factors associated with victimisation for males and females. Males more frequently experienced violence or threats of violence than females, with smaller gender differences for property victimisation. The implication of these findings is that prevention efforts to reduce violent victimisation might usefully be specifically targeted at young males.

While it is likely that some of the victimisation incidents reported were relatively trivial, the emotional and other costs experienced by victims and the general impact on their wellbeing may have been substantial. Although broad comparisons of victims and non-victims did not reveal differences in levels of depression, anxiety or stress²⁵, closer investigation of the type of incident experienced indicated that individuals involved in violent, interpersonal incidents had significantly higher levels of depression and anxiety than individuals who had not been involved in such incidents²⁶. In contrast, there were no differences in psychological adjustment between those who experienced property victimisation and those who did not²⁷. A possible explanation is that violent, interpersonal incidents, in particular, may have a negative impact on psychological adjustment. Thus, prevention efforts to reduce the occurrence of violent, interpersonal victimisation may also impact on mental health outcomes for some young people. Future research on this issue will further enhance understanding of the impact of victimisation on mental health.

Antisocial behaviour increases the likelihood of victimisation

The findings show clearly that engagement in antisocial behaviour strongly increases the likelihood of all forms of victimisation. These results are consistent with previous studies that have also found victimisation to be high among antisocial individuals. The association between antisocial behaviour and victimisation is often ignored in the context of crime prevention strategies, however interventions that focus on either behaviour may provide dual benefits by both reducing victimisation and offending behaviour.

One implication of the current findings is that when considering the costs of antisocial behaviour to the individual, family and community, the mental health harms associated with the increased risk of victimisation should also be highlighted. Furthermore, research suggests that victimisation is associated with a range of deleterious consequences, including effects on personality style and educational attainment (Macmillan 2001). Given the strong links between antisocial behaviour and victimisation found by the current study, it is likely that targeting antisocial behaviour may also produce reductions in victimisation at the same time. For example, measures to draw potentially antisocial people away from areas or activities in which victimisation is likely to occur may potentially reduce both victimisation and antisocial behaviour.

The current study investigated the links between antisocial behaviour and victimisation at a single time point, therefore the across-time pathways between victimisation and antisocial behaviour could not be investigated. As noted earlier, the pathways are likely to be two-way. Engagement in antisocial behaviour may place individuals in environments where victimisation is more likely to occur. Additionally, there may be underlying factors, such as being young, urban and leading active social lives, which

25 All victims compared with all non-victims: depression $t(1126) = -1.56, p = .117$; anxiety $t(1127) = -1.31, p = .191$; stress $t = -1.18, p = .237$
26 Victims who experienced violent, interpersonal incidents compared with non-victims: depression $t(1126) = -2.78, p < .006$, anxiety $t(1127) = -2.08, p < .039$; stress $t = -1.17, p = .089$

27 Victims who experienced property victimisation compared with non-victims: depression $t(1126) = -0.44, p = .662$, anxiety $t(1127) = -1.28, p = .202$; stress $t = -0.92, p = .360$

increase exposure and risk to both victimisation and involvement in antisocial behaviour. Research also suggests that victimisation earlier in life may contribute to the later development of antisocial behaviour through its impact on various domains of functioning (Falshaw 1996). Thus, it is possible that antisocial behaviour among young adults is related to harms resulting from victimisation experienced at an earlier age. The processes by which this may occur are not well understood. One possibility is that victimisation weakens the normative curbs on behaviour and provides an impetus or motivation for the victim to recoup perceived losses or reassert himself/herself through antisocial behaviour. Further research is needed to further elucidate the pathways between antisocial behaviour and victimisation.

Links between antisocial behaviour and specific types of victimisation

Distinct differences in the type of victimisation incidents experienced by *highly antisocial* and *low/non antisocial* individuals were found. While most *low/non antisocial* victims experienced property victimisation, the majority of *highly antisocial* victims experienced violent, or violent *and* property, incidents. Furthermore, closer examination of the relationship between types of antisocial behaviour and victimisation revealed a strong association between violent antisocial behaviour and the experience of violent victimisation.

These findings have a number of important implications. While it is important to acknowledge that violent victimisation was sometimes experienced by young adults who were not antisocial, it is apparent that, to a considerable degree, both victimisation and antisocial behaviour of a violent nature were being experienced and carried out by the same young people. These findings challenge the common perception that victims are weak and vulnerable. Yet, at the same time, it must be emphasised that it would be inaccurate and unhelpful to blame victims for the occurrence of victimisation or see them as likely offenders.

A further implication is that at this age, it may be misleading to treat victims and offenders as distinct groups, particularly in relation to violent victimisation. For example, engagement in a violent antisocial act such as physical fighting may simultaneously result in violent victimisation. Especially in relation to physical fights, the distinction between who is the offender and who is the victim may be blurred. Thus prevention efforts might more profitably focus on preventing the behaviour and the circumstances surrounding the incident, rather than focusing on distinguishing between the “offender” and the “victim”. Such prevention efforts may include education of parents and young people, and public awareness about behaviour that is unacceptable, avoidable, and for which help can be sought.

A further possibility is that in the case of violence or threats of violence, an inability or unwillingness to resolve disputes amicably may heighten the likelihood of both offending and victimisation. Thus, training in conflict resolution and social-cognitive problem solving skills might have preventative effects for both offenders and victims. Greater understanding of the mechanisms and relationships between victimisation and antisocial behaviour may illuminate the causal processes involved and make crime prevention efforts more effective overall.

Most victims were not antisocial

It is important to note that while most antisocial young people had been involved in a victimisation incident, the majority of individuals who had been victims of crime were not involved in antisocial behaviour. These findings point to the potential dangers of labelling young people as victims and then blaming them because a connection has been found between victims and offenders. While there is overlap between antisocial behaviour and victimisation, it is far from absolute.

Victimisation is known to significantly impact on people’s daily lives and also has emotional consequences (Victorian Department of Justice Crime Victimisation Survey 1999), for example lower self efficacy, and diminished perceptions of and trust in others (Macmillan 2001). Individuals also differ in their capacity to withstand and recover from the effects of such experiences. There is a need to investigate the short- and long-term effects of victimisation, whether the effects persist over time, differ according to the type of victimisation, or whether individual characteristics influence resilience and recovery from victimisation. The impact of being defined as a “victim” on development across the life course could also be investigated. Given that efforts to reduce victimisation are likely to have a wide range of benefits for individuals, as well as benefits in reducing crime, it is important that victims not be neglected in crime prevention strategies.

Factors associated with victimisation among antisocial and low/non antisocial groups

The findings from the sets of analyses investigating the characteristics and attributes that differentiated victims and non-victims suggested considerable support for the routine activities perspective. According to this perspective, victimisation incidents most frequently occur when individuals engage in activities or are placed in situations which increase the risk of victimisation. Various aspects of lifestyle activities were found to be important. For instance, friendships with other antisocial youth and binge drinking were particularly characteristic of both *highly antisocial* and *low/non antisocial* victims. *Highly antisocial* victims were less likely to be involved in a romantic relationship, while a poorer quality relationship with parents and marijuana use were more typical of *low/non antisocial* victims. Friendship networks that include antisocial peers may provide an environment in which risky

activities and behaviour, such as fighting and drug use, occur. Conversely, a romantic relationship may take individuals away from unsafe environments and reduce their engagement in risky activities. While beyond the scope of the present study to determine, it is possible that a lower quality relationship with parents might have led to less parental guidance, or less parental awareness of the young people's activities. These findings help to identify lifestyle factors and social contexts which are risky, and which increase the risk of victimisation, providing valuable evidence to inform crime prevention strategies.

The interpersonal perspective, which explains victimisation risk in terms of personal characteristics such as temperament, appeared to be less salient in differentiating between victims and non-victims. However, it is notable that those who were not victimised seemed to exhibit a more reserved personal style (e.g., non-victims were shyer, and were less flexible and assertive). One likely consequence of a more reserved style is that these individuals may encounter fewer opportunities to engage in activities that are associated with victimisation (e.g., associating with antisocial peers, binge drinking). Interestingly, these findings parallel an earlier ATP investigation of factors that may prevent an individual from developing antisocial behaviour in adolescence. Smart et al. (2003) identified youngsters who possessed characteristics that put them at greater risk of developing antisocial behaviour, yet who did not go on to engage in persistent antisocial behaviour. Similar to this current study, a key characteristic that differentiated these individuals was their propensity to be more reserved.

Overall, these findings have implications for reducing victimisation among young people. The various risks associated with engagement in certain lifestyles and activities indicate the need to provide safe environments and recreational activities for young adults.

Low reporting of victimisation to police

There was considerable variation in the extent to which different types of victimisation were reported to the police. Overall, the rate of reporting violent/interpersonal incidents was particularly low. The under-reporting of violent/interpersonal victimisation, particularly among young people, is a well established finding (Rutter et al. 1998), which raises particular concerns for criminal justice agencies in that it suggests low confidence in these agencies among young people. By not accessing criminal justice agencies young people could be deprived of justice and appropriate supportive responses to the victimisation incident. Additionally, without knowledge of offences, police also have less intelligence information and may be limited in their ability to identify and apprehend possible suspects. This may affect the general capacity of police to prevent and protect against crime (Rutter et al. 1998).

Many victims felt that the incident was not important enough to report to police, or believed it was a private matter. As Finkelhor and Ormrod (2001) suggest, often victimisation among young people is not viewed as seriously as victimisation among older age groups. Additionally, what young people consider "normal" may also affect their readiness to report. The desire to be autonomous, not to be dependent on adults, and the risk of undesirable consequences such as peer stigmatisation or bullying, may all affect the decision to report. Greater knowledge of the potential seriousness of victimisation, as well as confidence in the capacity of the justice system and its agencies to deal with victimisation, might contribute to increasing the rate of reporting victimisation to police by young people.

A high proportion of victims, from both antisocial and Low/non antisocial groups, also indicated negative attitudes towards the police as a reason for not reporting the incident. If attitudes to police were improved then it is likely that higher levels of reporting would occur, which might give individuals greater access to the justice system and support services. This highlights the importance of building positive relationships between police and young people, and increasing young people's trust and confidence in the police.

In conclusion, relatively high rates of victimisation were found among this group of 19-20 year old Victorians, with one-third reporting that they had experienced victimisation in the past twelve months. The most frequent types of victimisation incidents reported were threats of violence, theft from a motor vehicle, and other theft. Males more frequently experienced victimisation than females. There was an association between experiences of violent/interpersonal incidents and mental health consequences, with those experiencing these types of incidents displaying higher levels of anxiety and depression. Further research is needed to investigate the impact of violent victimisation on mental health.

Antisocial behaviour was found to be a strong risk factor for victimisation, with links particularly evident between violent antisocial behaviour and violent/interpersonal victimisation. However, the links were far from absolute as most young people who experienced victimisation had not been involved in antisocial behaviour. Lifestyle factors and specific social contexts appeared to increase the risk of victimisation. About half the victimisation incidents had been reported to police. The main reasons for not reporting such incidents were their perceived lack of importance, negative attitudes towards the police, or a belief that the incident was a private matter. The implications for crime prevention were highlighted and it was suggested that a clearer focus on victimisation could have dual benefits in reducing both antisocial behaviour and victimisation.

4



The role of substance use in the development of adolescent antisocial behaviour

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The role of substance use in the development of adolescent antisocial behaviour

Adolescent substance use is associated with a wide range of difficulties in personal and social functioning, for example diminished educational attainment, mental health problems, and impaired physical health (White, Bates, and Labouvie 1998). Adolescent substance use is also strongly associated with engagement in antisocial behaviour, such as violent and property antisocial acts, in both adolescence and later in adulthood (Van Kammen, Loeber, and Stouthamer-Loeber 1998).

The role of substance use in the development of antisocial behaviour is an issue of concern for many, including policy makers, practitioners, researchers and the general community. However, the relationship between adolescent substance use and antisocial behaviour is complex. There is evidence of reciprocal connections between both behaviours, where antisocial behaviour impacts on substance use, but substance use also impacts on antisocial behaviour. In addition, some argue that adolescent substance use and antisocial behaviour share similar precursors and may therefore co-occur, rather than be causally linked (White 1997). To develop sound intervention and prevention policies and programs, a better understanding of the relationship between adolescent substance use and antisocial behaviour is required. This current investigation, which has the benefit of longitudinal data, aims to investigate the role of substance use in the development of antisocial behaviour.

There is a large and complex evidence-base concerning relationships between substance use and antisocial behaviour. A selective overview of relevant theories and findings is presented here, focusing on those which have been most salient and influential. For a comprehensive review of literature concerning the role of substance use in antisocial behaviour, see White (1997), and White, Loeber, Stouthamer-Loeber and Farrington (1999). It should be noted that theories and findings concerning adolescent antisocial behaviour have previously been reviewed in Reports One and Two (Smart et al. 2003; Vassallo et al. 2002), and thus will not be further discussed here.

Adolescent substance use

A number of studies have provided data on the prevalence of substance use among Australian adolescents (for example, Bond, Thomas, Toumbourou, Patton and Catalano 2000; the National Drug Strategy Household Survey 2001). Briefly, these studies reveal that many adolescents engage in the use of licit²⁸ substances, particularly alcohol. For instance, two-thirds of 14 to 17 year olds reported they had recently consumed alcohol, with approximately one-fifth reporting regular alcohol usage (National Drug Strategy Household Survey 2001). Furthermore, 35 per cent of adolescents aged 14-17 years and 64 per cent of those aged 18-24 years were reported to drink at risky or high-risk levels in the short term (Australian Institute of Health and Welfare 2003). However, cigarette use was less frequent, with 15 per cent of 14-17 year olds reported to be "recent smokers" and 82 per cent "non-smokers" (had smoked fewer than 100 cigarettes in their lifetime), while 3 per cent were "ex-smokers" (National Drug Strategy Household Survey 2001). Of illicit substances, marijuana is the most common substance used by adolescents, with one-fifth of 14-17 year olds reporting that they had used marijuana in the past year (National Drug Strategy Household Survey 2001). However, use of other illicit substances (heroin, hallucinogens, ecstasy, and amphetamines) appears to be considerably lower, with generally 5 per cent or fewer of 14-17 year olds reporting use of these substances within the past year (National Drug Strategy Household Survey 2001).

Studies investigating patterns of substance use across adolescence indicate that the frequency of both illicit and licit substance use rises through adolescence and peaks in the mid-twenties (Spooner, Hall and Lynskey 2001). There is also evidence that for some young people, substance use develops through a series of stages, with initiation via licit substances moving on to more frequent use, and/or initiation into illicit substances (Kandel 1989). In summary, the frequency of licit and illicit substance use increases across adolescence, and while the use of licit substances is common, fewer adolescents engage in illicit substance use.

Connections between adolescent substance use and antisocial behaviour

The co-occurrence of adolescent antisocial behaviour and substance use is well-documented (White 1997). Moffitt and Harrington (1996) report that rates of substance use (alcohol, cigarette use and marijuana) were highest among "life-course" antisocial adolescents, somewhat lower among those who displayed "adolescent-limited" antisocial behaviour, and lowest among individuals who did not engage in antisocial behaviour. Associations have also been found between specific substances and types of antisocial

²⁸ The term 'licit' is used to distinguish between substances that are legal in Australia for some members of the population (18 years of age and above) and substances, which are illegal for all members (for example, marijuana, ecstasy, amphetamines, heroin). Substances illegal for all members are termed 'illicit' here.

behaviour. Most notably, a consistent association has been found between violence and alcohol use and/or misuse. For instance, Fergusson, Lynskey and Horwood (1996) reported that 32 per cent of adolescents aged 15-16 years who misused alcohol engaged in violent offending, compared with 8 per cent of those who did not abuse alcohol. Engagement in violence and also property offences has been linked to the use of illicit drugs such as heroin and amphetamines, and use of multiple substances (White, Tice, Loeber and Stouthamer-Loeber 2002). In addition, commencement of substance use at an early age, and particularly multiple substance use, was related to later antisocial behaviour and other problem behaviours (Van Kammer et al. 1998).

There are a number of hypotheses concerning the connections and pathways between substance use and antisocial behaviour. One hypothesis is that engagement in antisocial behaviour impacts on substance use, whereby antisocial behaviour provides a context or the resources (for example, peer group, or money from crime) for engagement in substance use (White 1990). A second hypothesis is that substance use leads to antisocial behaviour. For example, substance users may resort to crime to generate income to support their substance addictions (White et al. 2002). Regular heroin users were found to commit property-related offences to fund their substance use (Anglin and Perrochet 1998). Another version of this second hypothesis is that the effects of substance use, such as dis-inhibition or cognitive-perceptual distortions, contribute to engagement in antisocial behaviour (Rajaratnam, Redman and Lenne 2000). Most notably the effects of alcohol intoxication such as reduced self-awareness, the lowering of social controls, and inaccurate assessment of risks have been linked to violence. Finally, many propose a third hypothesis: that the causal connections are bi-directional, with the relationship between substance use and antisocial behaviour being one of mutual reinforcement (White 1997).

In contrast to hypotheses that suggest there are causal relationships between substance use and antisocial behaviour, others propose that adolescent substance use and antisocial behaviour co-occur rather than are causally linked (see Elliott, Huizinga and Menard 1989; Fagan, Weis, and Cheng 1990; Jessor and Jessor 1977). According to this view, substance use and antisocial behaviour form part of cluster of adolescent problem behaviours that co-occur, and which may share a number of concurrent and prior risk factors (Mason and Windle 2002). For instance, Fergusson, Lynskey and Horwood (1996) found that, when the effects of common antecedents were taken into account, (such as a family history of alcohol or drug abuse, and affiliation with antisocial peers), the relationship between alcohol misuse and property offending was no longer apparent. On the basis of these findings, Fergusson and colleagues (1996) suggested that the relationship between alcohol misuse and engagement in property offences resulted from common influences associated with both behaviours, and was thus not causal.

Of the risk factors common to both substance use and antisocial behaviour, the influence of peers is particularly important (Dishion and Owen 2002; White 1990). For instance, as suggested by control theory (Elliot et al. 1989) and the Social Development model (Catalano and Hawkins 1996), adolescents who were weakly bonded to their parents, teachers or schools, but who were strongly attached to antisocial peers, were more likely to engage in antisocial behaviour (La Grange and White 1985; Vassallo et al. 2002) as well as substance use (Elliot et al. 1989). Other risk factors found to be common to antisocial behaviour and substance use include individual attributes (such as difficult temperament, externalising and internalising behaviour problems), family characteristics (parental harsh or erratic discipline, abuse or rejection by the family), and environmental factors (for example, peer groups, community disorganisation) (White 1997).

While some co-occurrence of antisocial behaviour and substance use is undisputed, the extent of this overlap is debated. Several studies have found that while some adolescents engage in both antisocial behaviour and substance use, others engage primarily in only one of these types of behaviour (see Fagan, Weis, Chen and Watters 1987; White and Labouvie 1994). Furthermore, the "common cause" hypothesis has been found to be inadequate, with studies reporting that particular factors seem to be related specifically to either substance use or to antisocial behaviour (for example, Kandel, Simcha-Fagan and Davies 1986; White and Labouvie 1994). For instance, White and Labouvie (1994) found that adolescents who engaged only in antisocial behaviour reported higher levels of hostility and paranoia. On the other hand, those who engaged only in substance use were less conscientious and impulsive and were less likely to use an aggressive, acting out coping style.

The "common cause" hypothesis has also been undermined by studies which have examined the influence of peers on both types of behaviour. The similarity of adolescents' behaviour and that of their peer group is promoted by two processes: selection and mutual reinforcement (Dishion, Calpaldi, Spracklen and Li 1995). Thus, initially adolescents may associate with or are drawn to those with similar attitudes and behaviours (Kandel 1978, 1986). In addition, a process of mutual reinforcement of values and behaviours occurs within the peer group, which then impacts on and influences individuals. In regards to substance use and antisocial behaviour, one interesting finding is that adolescents may adopt the behaviour (for example, substance use and/or antisocial behaviour) of peers with whom they wish to interact, or develop friendships with (Dishion et al. 1995; Dishion and Owen 2002). For instance, cigarette use may be a means of promoting relationships with cigarette using peers, especially for adolescents with poor social skills and self-esteem.

While attachment to antisocial peers has been found to predict antisocial behaviour and substance use, studies often combine peer substance use and peer antisocial behaviour in their measure of "deviant peer affiliations"²⁹, failing to differentiate between

29 The terms 'deviant peers' and 'deviant peer affiliations' have widely been used to refer to peers who engage in antisocial behaviour and/or substance use. They do not imply participation in more extremely deviant or pathological activities. While recognising that these terms are less than ideal, they will continue to be used here as they have been widely used in this field of research and no suitable alternative could be found (although the term 'antisocial peer affiliations' is also used here where appropriate).

these different types of peer behaviours as predictors. However, White (1991) found specific connections between an adolescent's involvement in marijuana use and/or antisocial behaviour and his/her peers' propensity to engage in one or both of these problem behaviours. Dishion and Owen (2002) found that early-onset substance use, particularly cigarette use, predicted the formation of friendships with other substance-using peers (although interestingly some of these groups reinforced and exacerbated the development of antisocial values and norms). These findings suggest more specific and differentiated connections beyond the simple association of antisocial peer affiliations with substance use and antisocial behaviour.

Thus, in summary it may be that in addition to the common risk factors shared by substance use and antisocial behaviour, there are specific risk factors for each outcome, including the possibility of each type of behaviour acting as an impetus for the other. However, the developmental sequences between different types of problem behaviours are as yet insufficiently defined or understood, with a key issue being whether one problem alters the onset and the course of other problem behaviours (Loeber, Farrington, Stouthamer-Loeber and Van Kammen 1998). Surprisingly, it seems that few studies have investigated the extent to which substance use leads to changes in patterns of antisocial behaviour over time (Mason and Windle 2002; Allen, Leadbeater and Aber 1994). The utility of longitudinal data in unravelling relationships between adolescent antisocial behaviour and substance use has been highlighted. Such data may be particularly useful in describing across-time patterns of and connections between substance use and antisocial behaviour, which may inform prevention and intervention efforts.

It is notable that there is little data about contemporaneous and across-time connections between antisocial behaviour and substance use in the Australian context, and to the authors' knowledge, the only available findings concerning developmental sequences and pathways also come from studies conducted in other countries. Yet there are important legal and cultural differences which may dilute the relevance of such studies to the Australian context. The legal age for consumption of alcohol, for example, is 18 years in Australia, but is 21 years in many parts of the United States, perhaps affecting adolescents' access to and use of alcohol, and societal tolerance of adolescent substance use.

This section investigates a number of issues regarding the role of substance use in the development of adolescent antisocial behaviour. The following questions are addressed:

- a) What is the relationship between substance use and antisocial behaviour; and between particular types of substance use (for example, alcohol) and particular types of antisocial behaviour (for example, violence)?
- b) Is substance use related to the maintenance of or desistence from adolescent antisocial behaviour?
- c) Is early substance use a risk factor for later antisocial behaviour?
- d) What are the relationships between an adolescent's antisocial behaviour and substance use and his/her friends' antisocial behaviour and substance use?

Methodology

Participants

The data reported in this section come from the three ATP survey waves conducted during adolescence at 13-14 years (1358 participating adolescents), 15-16 years (1310 adolescents), and 17-18 years (1260 adolescents).

Measures

At 13-14, 15-16 and 17-18 years, adolescents provided information on their substance use and antisocial behaviour, as well as their friends' antisocial behaviour and substance use. Details of the measures used are outlined below.

Substance use

Definitions of substance use

At each time point, adolescents answered questions about their recent use of alcohol, cigarettes, marijuana and other illicit substances. Thus, they reported the number of days in the past month in which they had used these drugs, except at 13-14 years where they reported their lifetime use of illicit substances and marijuana.

To aid interpretation, days of use were classified into 4 categories - none, low, moderate, and high. Table 25 summarises the categories developed. For alcohol and cigarettes, the categories approximated no recent use, occasional use (the "low" group), weekly use (the "moderate" group) or use several times per week (the "high" group). There were some minor across-time differences in the cut-offs developed at the three time points to take into account the normative increase in substance use that occurs over the adolescent period. For marijuana and other illicit substance use, the criteria were generally equivalent to "no" or "some" current use.

As Table 7 shows, for each substance type, frequency of use was also dichotomised for use in later analyses. For alcohol and cigarettes, frequency of use was dichotomised into "no/low use" and "moderate/high" use. For illicit substances and marijuana, frequency of use was dichotomised into "no use" and "some lifetime use" at 13-14 years, and, into "no use" and "any use in the past month" at 15-16 and 17-18 years.

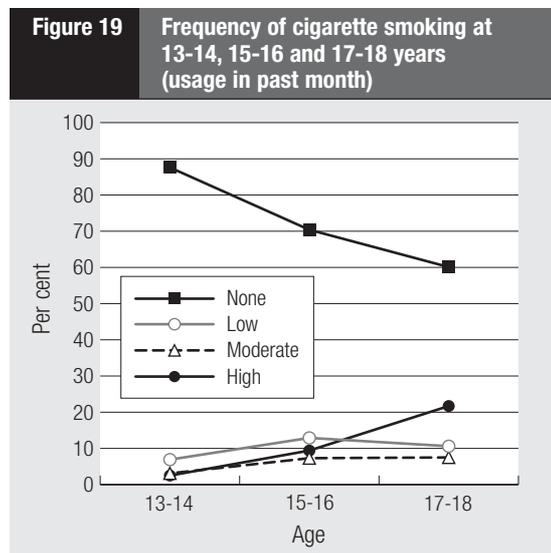
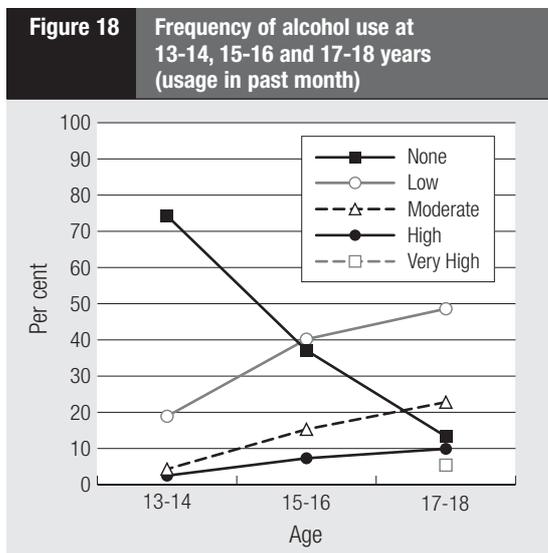
Table 7		Cut-offs used to form categories of use for each substance type			
	Time point (years of age)	Days of use (past month)	Use classification		Dichotomised classification
Alcohol	13-14 and 15-16	0	No	→	No/Low
		1 to 3	Low		
		4 to 7	Moderate	→	Moderate/High
		8 to 30	High		
Alcohol	17-18	0	No	→	No/Low
		1 to 4	Low		
		5 to 9	Moderate	→	Moderate/High
		10 to 14	High		
		15 to 30	Very high		
Cigarettes	All time points	0	No	→	No/Low
		1 to 3	Low		
		4 to 15	Moderate	→	Moderate/High
		16 to 30	High		
Marijuana	13-14	0	No	→	No
	15-16 and 17-18	Any lifetime use	Any	→	Any (lifetime)
		0	No	→	No
		1 to 4	Low	→	Any (month)
5 to 30	High				
Other illicit substances	13-14	0	No	→	No
	15-16 and 17-18	Any lifetime use	Any	→	Any (Lifetime)
		0	No	→	No
		Any use in past month	Any	→	Any (month)

Note: The slightly different categories developed for cigarette use are a result of the trend for such use to be primarily occasional or very frequent, with moderate use less evident.

Levels of substance use in the ATP sample

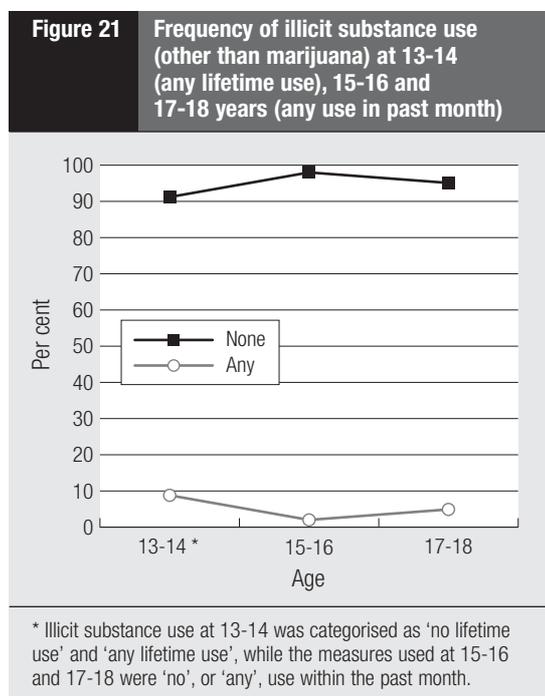
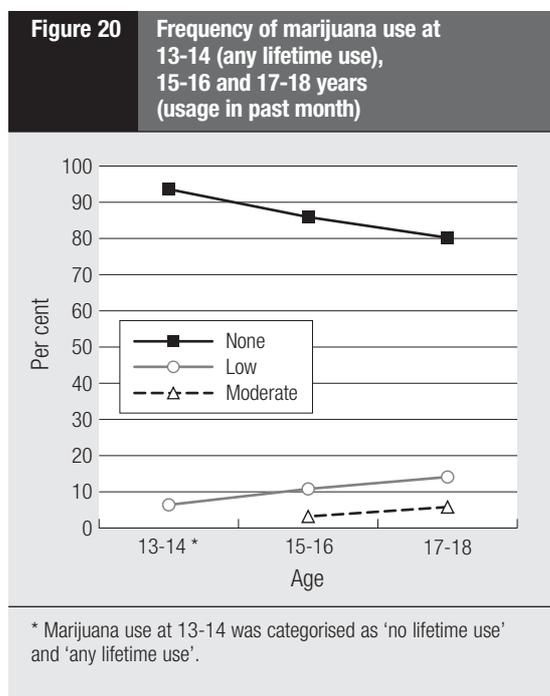
The frequency of **alcohol use** in the past month as measured at the 13-14, 15-16 and 17-18 years survey waves is shown in Figure 18. As can be seen, at 13-14 years a minority (approximately 25 per cent) of adolescents had recently consumed alcohol. Most of those using alcohol reported low levels of use. At 15-16 years the rate of alcohol use had more than doubled. Again, most reported low levels of consumption (approximately 40 per cent of adolescents), however approximately one-in-five reported moderate or high recent alcohol consumption. By 17-18 years, only 13 per cent had not used alcohol in the past month, almost half reported low consumption, while over 20 per cent had consumed at moderate levels (more than once a week) and over 15 per cent had consumed alcohol at high or very high levels.

Figure 19 shows the frequency of **cigarette smoking** within the past month across the time span of 13 to 18 years. At 13-14 years, few (13 per cent) had smoked cigarettes. Cigarette use increased at 15-16 and at 17-18 years, with the rate of



recent use rising to approximately 30 per cent and 40 per cent, respectively. There was a trend for adolescents who reported cigarette use at 17-18 years to smoke at high levels, possibly reflecting the addictive nature of cigarette use.

Marijuana use at 13-14 (any lifetime usage), and at 15-16 and 17-18 years (days per month) is displayed in Figure 20. As can be seen, approximately 6 per cent of adolescents reported some lifetime marijuana use at 13-14 years. At 15-16 years, 11 per cent of adolescents reported low recent use, and just over 3 per cent a high level of use. By 17-18 years, approximately 14 per cent and almost 6 per cent reported use at low and high levels, respectively.



Illicit substance use other than marijuana, at 13-14 (lifetime use), and at 15-16 and 17-18 years (use in past month) is shown in Figure 21. Approximately 9 per cent reported some lifetime use of illicit substances at the age of 13-14 years. At 15-16 years, 2 per cent reported using an illicit substance in the past month. Because the measure at 13-14 years was lifetime usage, and the measure used at the later time points was use in the past month, the trends from 13-14 years to later ages cannot be assessed. However, a small increase in illicit substance use from 15-16 to 17-18 years is discernible. At 17-18, just under 5 per cent indicated recent illicit substance use.

Antisocial behaviour

Definitions of antisocial behaviour

Using similar criteria to that described earlier on page 10, adolescents were classified into *low/non antisocial* or *highly antisocial* groups at each time point. It should be noted that for the current analyses, marijuana and illicit substance use were not included in the definition of antisocial behaviour. As a result, the proportion of adolescents who were classified as *highly antisocial* at each time point was slightly lower than reported in the First Report. Table 8 displays the proportion of adolescents who were classified as *highly antisocial* at each time point (for comparison, the proportions reported in the First Report are also displayed).

Across-time patterns of antisocial behaviour

Next, adolescents were classified according to the pattern of antisocial behaviour displayed across the three time points from 13 to 18 years, leading to the formation of 3 groups:

- a group who were persistently antisocial from early to late adolescence (109 individuals) – the *persistent* group;

Table 8 Proportion of adolescents who were classified as <i>highly antisocial</i> at each time point for the current analyses and the First Report			
Time point (years of age)	Current investigation		First Report
13-14		11.5	12.4
15-16		18.1	19.7
17-18		16.2	20.0

Note: Rates are slightly lower in the current investigation as marijuana and other illicit drug use were excluded from the definition of antisocial behaviour

- a group who engaged in antisocial behaviour in early or mid adolescence and then desisted (90 individuals) – the *experimental* group
- a group who displayed no, or low, levels of antisocial behaviour over adolescence (844 individuals) – the *low/non antisocial* group.

As noted before, the group sizes were slightly lower than reported in the First Report because illicit drug use was excluded from the index of antisocial behaviour.

Particular types of adolescent antisocial behaviour

The criteria reported in the Second Report (Smart et al. 2003), were used to identify groups of adolescents who engaged in violent and/or non-violent antisocial behaviour at 17-18 years. Four groups of adolescents were identified³⁰:

- a *violent only* group; these individuals had on several occasions in the past year been involved in physical fighting, attacking someone with the intention of seriously harming them, or bullying or threatening others, and had engaged in fewer than three non-violent antisocial acts in this time period (N=40)
- a *non-violent only* group³¹; these had engaged in three or more different types of non-violent antisocial behaviour during the past year (for example, stealing, vandalism, graffiti drawing, running away from home overnight or longer, school suspension/expulsion, driving a car without permission, selling illegal drugs), but had not displayed repeated violent behaviour in this time period (N=80)
- a *dual problem* group; these had engaged in *both violent and non-violent* antisocial behaviour as defined above during the previous 12 months, (N=34), and
- a *comparison* group; these individuals did not display violent or non-violent behaviour during the past 12 months (N=1048).

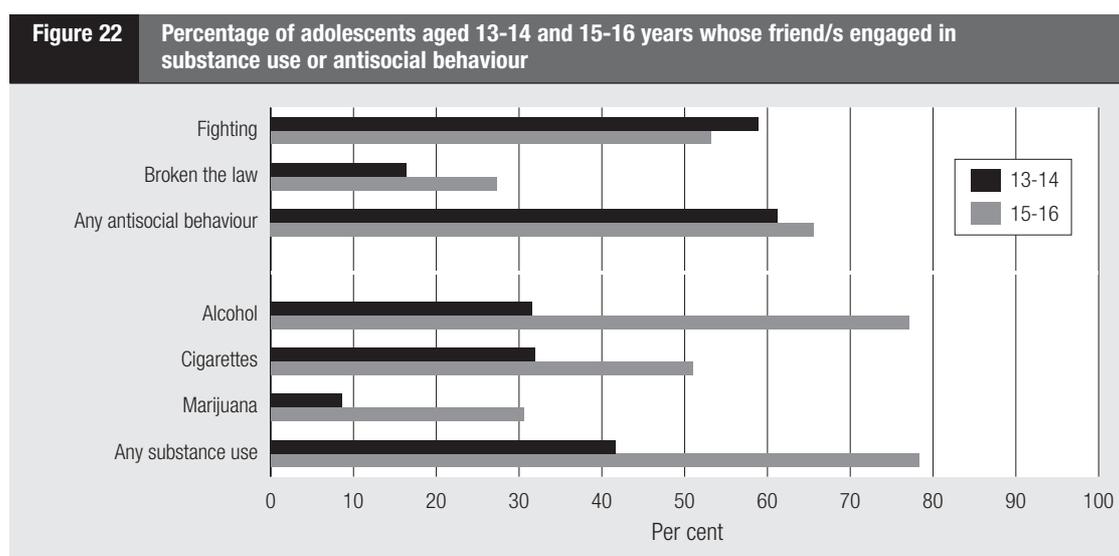
Substance use and antisocial behaviour among friends

Definitions of substance use and antisocial behaviour among friends

At 13-14 years and 15-16 years, adolescents were asked to report their three closest friends' engagement in substance use and antisocial behaviour. For substance use, three questions assessed whether each close friend "never", "sometimes", or "often" used cigarettes, alcohol or marijuana. Friends' antisocial behaviour was assessed by two questions about whether each friend "never", "sometimes", or "often" had been involved in lots of fights, or had broken the law (for example, shoplifted, stolen a car, engaged in vandalism).

Levels of substance use and antisocial behaviour among friends

Figure 22 shows the proportion of adolescents who at 13-14 and 15-16 years reported that at least one of their closest friends had "sometimes" or "often" engaged in antisocial behaviour (frequent fighting, breaking the law) and substance use (alcohol, cigarettes, marijuana). As can be seen, at the earlier time point, a majority (almost 60 per cent) reported that a friend had engaged in frequent fighting, while relatively few (approximately 16 per cent) reported that a friend had broken the law. Just over 30 per cent reported that a friend drank alcohol, with this figure being similar for cigarette use. Few reported that one or more best friends had used marijuana (approximately 9 per cent).



30 See *Patterns and precursors of adolescents antisocial behaviour: Types, Resiliency and environmental influences Report 2* (Smart et al. 2003) for a more detailed description of the formation of these groups

31 A small number of *non-violent* adolescents while not fitting the *violent* criteria, had reported some aggressive behaviour during the past year (N=11). These individuals were excluded as they did not clearly fit the profile for the *non-violent only* group.

At 15-16 years, fewer adolescents, but still a majority, reported that one or more friends had frequently been involved in fighting. However, more reported that a friend had broken the law. In contrast, there was a considerable increase in the numbers reporting substance use among their friends. This increase was greatest for alcohol, with 78 per cent of adolescents reporting that one or more friends had used alcohol. Half reported that one or more friends smoked cigarettes, and almost one third reported marijuana use by a friend.

FINDINGS

The following sections explore a number of questions concerning the relationship between substance use and antisocial behaviour. The first section compares *highly antisocial* and *low/non antisocial* adolescents on the frequency of substance use at the same time point; and rates of substance use among groups displaying differing across-time patterns of antisocial behaviour (*persistent*, *experimental* and *low/non antisocial* behaviour). The second section focuses on connections and pathways between adolescent substance use and antisocial behaviour from early to late adolescence. The final section investigates the relationship between adolescents' own engagement in antisocial behaviour and substance use, and their friends' engagement in these behaviours.

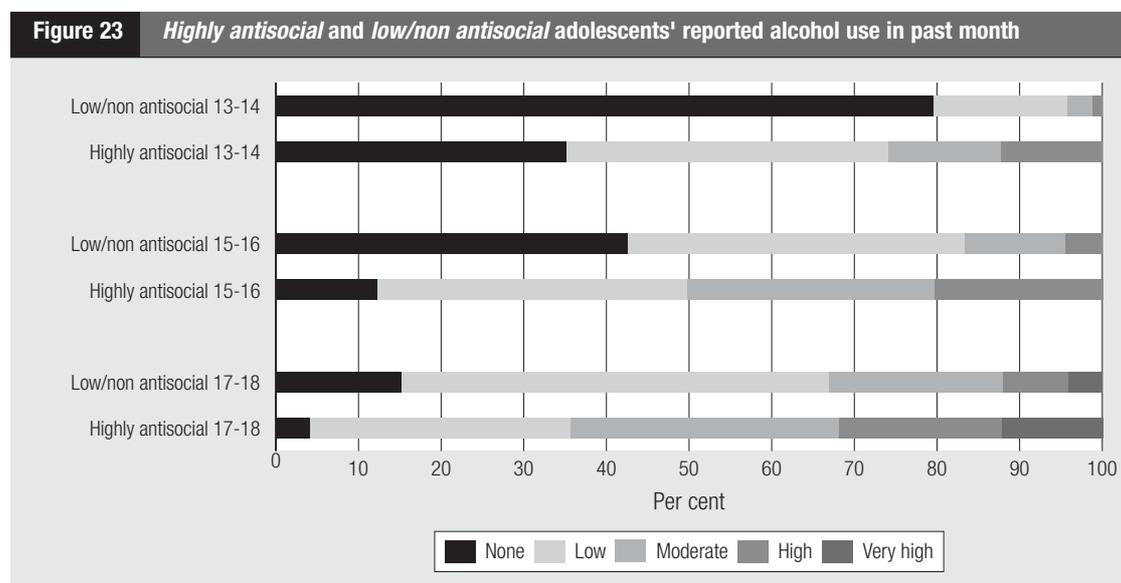
Connections between substance use and antisocial behaviour

Connections at the same point in time

This section explores differences between *highly antisocial* and *low/non antisocial* adolescents in rates of substance use at the same point in time. A later section will explore across-time connections between substance use and antisocial behaviour. In the descriptions which follow, the statistical analyses undertaken assess whether rates of substance use were significantly higher, or lower than would be expected by chance³². Effect sizes³³ were used to assess the strength of these group differences.

Highly antisocial and *low/non antisocial* adolescents' current alcohol use at different ages across the time span of 13 to 18 years is displayed in Figure 23³⁴. As can be seen, at 13-14 years, almost two-thirds of adolescents who were *highly antisocial* at that age reported some recent alcohol use, although most (40 per cent), reported low levels of use. In contrast, far fewer *low/non antisocial* adolescents (approximately 20 per cent) had recently consumed alcohol.

At 15-16 years, almost all adolescents who were *highly antisocial* at that age had also used alcohol during the past month (88 per cent). Approximately half reported moderate or high levels of use and a further 40 per cent reported low level use. In comparison, over 40 per cent of *low/non antisocial* adolescents reported no recent alcohol use and another 40 per cent reported low levels of use. Few (17 per cent) *low/non antisocial* adolescents reported moderate or high levels of use.



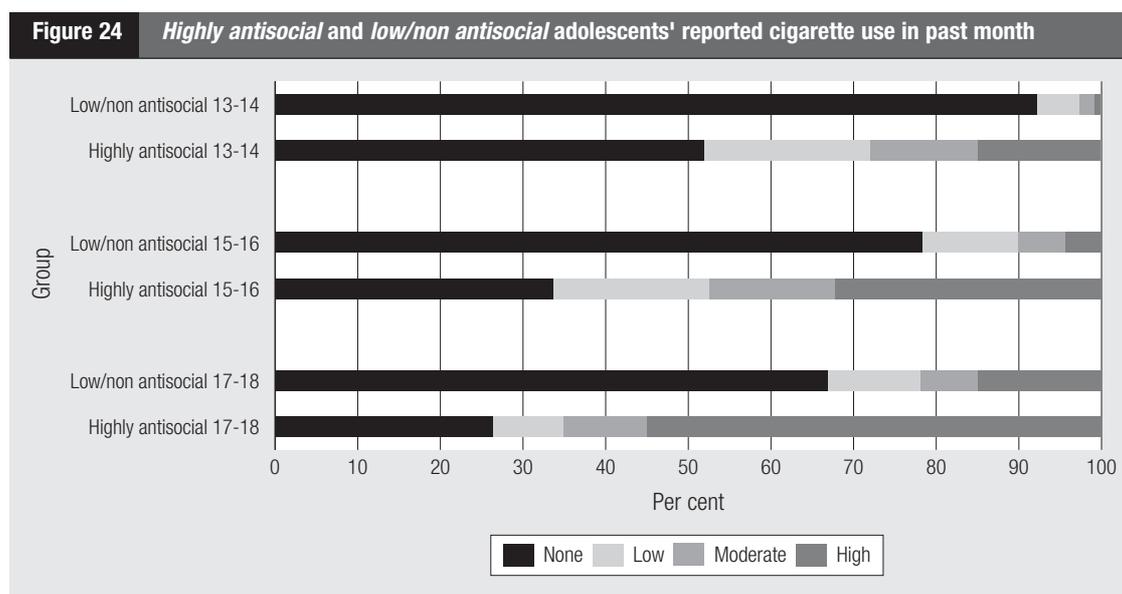
32 Chi-square tests were used to investigate whether the proportion of *highly antisocial* or *low/non antisocial* individuals who reported using a particular substance was significantly different to that which would be expected by chance. Each cell's standardised residual was examined to identify more specifically where the significant departures from chance occurred.

33 Cohen's (1988) effect size criteria were used to assess the strength of group differences across the various domains. For a chi-square test of independence, an effect size over .10 represents a small effect over .20 a medium effect, and over .40 a large effect. Effect sizes under .10 reflect differences that are significant but not very substantive.

34 Statistical differences between *antisocial* and *non-antisocial* groups for alcohol use: at 13-14 years, Chi-square (3) = 175.45 $p < 0.001$; at 15-16 years, Chi-square (3) = 144.91 $p < 0.001$; and at 17-18 years, Chi-square (4) = 82.24 $p < 0.001$.

Patterns of alcohol use at 17-18 years were similar to those at 15-16 years, although there was a shift from “no” to “low” use, particularly among *low/non antisocial* adolescents. Approximately 30 per cent of those who were highly antisocial at this age consumed alcohol at high levels (20 per cent at high and 10 per cent at very high levels), whereas the rate of high use, 12 per cent, was much lower among *low/non antisocial* adolescents (with 8 per cent drinking at high and 4 per cent at very high levels). Just over half of *low/non antisocial* adolescents reported low level recent alcohol use compared with approximately 30 per cent of highly antisocial adolescents, while around one third of highly antisocial and one fifth of *low/non antisocial* adolescents reported moderate levels of alcohol use.

Turning now to cigarette use, sizeable differences between *highly antisocial* and *low/non antisocial* adolescents were evident (Figure 24)³⁵. Thus, at 13-14 years, almost 50 per cent of those who were *highly antisocial* at this age had smoked cigarettes in the past month, compared with 8 per cent of *low/non antisocial* adolescents. Moreover, over one quarter of *highly antisocial* adolescents reported moderate or high cigarette use at this age. At 15-16 years, two-thirds of *highly antisocial* individuals reported recent cigarette use (and for most, use at high levels), by comparison with approximately 20 per cent of *low/non antisocial* adolescents. At 17-18 years, there was a further increase in cigarette smoking, with 75 per cent and 33 per cent of those who were *highly antisocial* and *low/non antisocial* at this age, respectively, reporting smoking in past month.



In terms of **marijuana use** (see Figure 25)³⁶, one-third of adolescents who were *highly antisocial* at 13-14 years reported some lifetime use of marijuana, whereas only 3 per cent of their *low/non antisocial* counterparts reported any lifetime use. At 15-16 years, close to half of the individuals who were *highly antisocial* at this age had used marijuana in the past month, compared with 7 per cent of *low/non antisocial* adolescents. At 17-18 years, one half of those who were highly engaged in *antisocial* behaviour reported recent marijuana use, by comparison with 12 per cent of those who were not involved in antisocial behaviour. Notably, almost one-quarter of *highly antisocial* adolescents reported high levels of marijuana use at this age.

Rates of other **illicit substance use** (such as ecstasy, amphetamines, and heroin) were lower overall, although significant group differences were still evident (Figure 26)³⁷. Thus, 25 per cent of those who were *highly antisocial* at 13-14 years of age reported some lifetime illicit substance use, while this figure was 7 per cent for *low/non antisocial* adolescents. At 15-16 years, approximately 9 per cent of those who were *highly antisocial* at this age reported illicit substance use in the past month compared with less than one per cent of *low/non antisocial* adolescents. An increase in the frequency of illicit substance use at 17-18 years was found, with approximately 15 per cent of individuals who were *highly antisocial* at this age and 3 per cent of *low/non antisocial* adolescents reporting recent illicit substance use.

Across-time connections between antisocial behaviour and substance use

The previous section investigated the association between antisocial behaviour and substance use at the same point in time, and demonstrated a strong relationship between the two behaviours. Connections between antisocial behaviour and substance

35 Statistical differences between highly *antisocial* and *low/non antisocial* groups for cigarette use: at 13-14 years, Chi-square (3) = 236.04 $p < 0.001$; at 15-16 years, Chi-square (3) = 227.01 $p < 0.001$; and at 17-18 years, Chi-square (3) = 170.65 $p < 0.001$

36 Statistical differences between *antisocial* and *non-antisocial* groups for marijuana use: at 13-14 years, Chi-square (1) = 228.19 $p < 0.001$; at 15-16 years, Chi-square (2) = 240.01 $p < 0.001$; and at 17-18 years, Chi-square (2) = 185.76 $p < 0.001$

37 Statistical differences between *antisocial* and *non-antisocial* groups for illicit substance use: at 13-14 years, Chi-square (1) = 51.46 $p < 0.001$; at 15-16 years, Chi-square (1) = 70.32 $p < 0.001$; and at 17-18 years, Chi-square (3) = 58.28 $p < 0.001$

Figure 25 *Highly antisocial and low/non antisocial adolescents' reported marijuana use in past month**

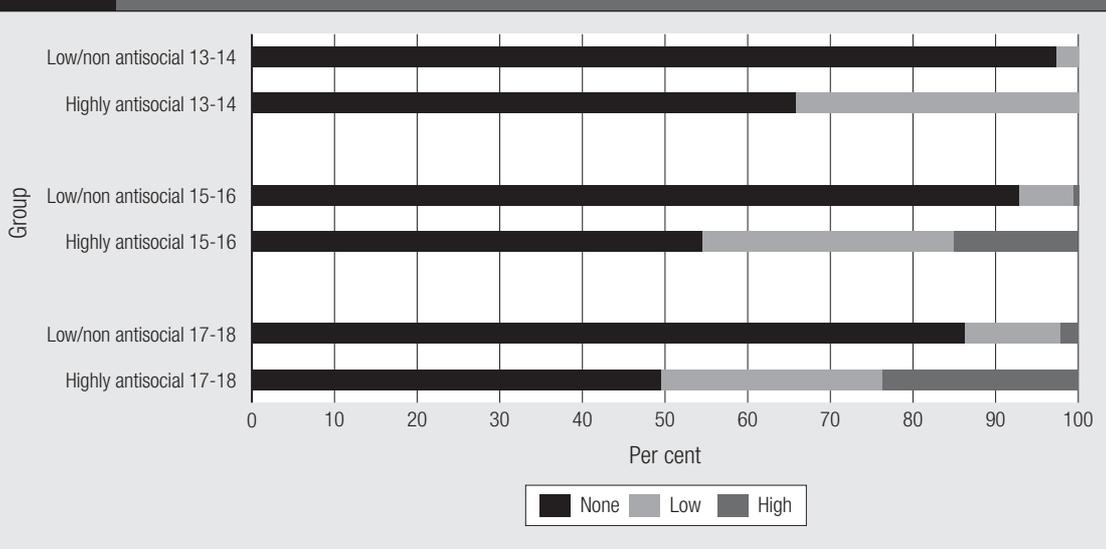
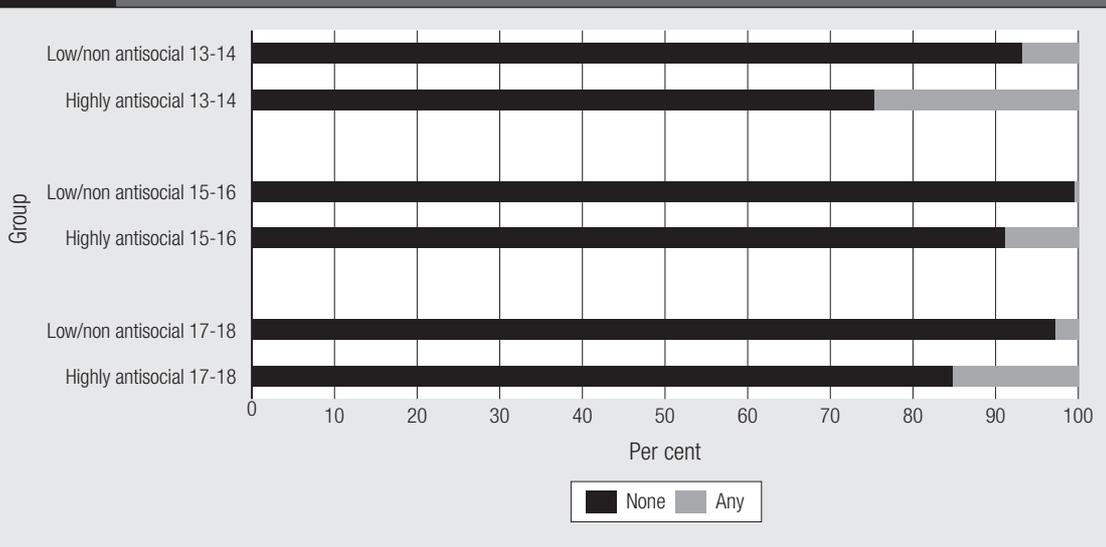


Figure 26 *Highly antisocial and low/non antisocial adolescents' reported illicit substance use (excluding marijuana) in past month**



* Illicit substance use at 13-14 years was measured as 'no' or 'any' lifetime use.

use are further explored by investigating rates of substance use among groups displaying *persistent*, *experimental* or *low/non* across-time patterns of antisocial behaviour (from 13 to 18 years of age)³⁸.

Multinomial logistic regression analyses were undertaken which compared the *low/non antisocial* group in turn to the *experimental* and *persistent* antisocial groups. For these analyses, the dichotomous substance use variables were used (i.e. *no* and *low* use were combined, as were moderate and high use, see Table 7, page 46 for further details)

Table 9 shows the percentage of the *persistent*, *experimental* and *low/non* antisocial groups who were moderate/high users of each type of substance, and the Relative Risk Ratios³⁹ (RRR) obtained from the statistical analyses comparing the *low/non antisocial* group to the *experimental* or *persistent* antisocial groups. The RRRs are similar to odds ratios, and indicate how powerful the difference is between the groups.

38 The *persistent antisocial* group had engaged in high levels of antisocial behaviour at 2 or more time points from 13 to 18 years, including the last time point. The *experimental antisocial* group had engaged in high levels of antisocial behaviour at one time point in early or mid adolescence only, while the *low/non antisocial* group had never engaged in high levels of adolescent antisocial behaviour (see page 10 for further details).

39 The relative risk ratio for a variable is the change in the odds of being in the target group (for example, being a moderate/high substance user) for each unit change in the variable. A relative risk of 1 for a variable represents no change in risk (odds are the same) at any level of that variable. Relative risk ratios significantly greater than 1 indicate an increased risk at increased levels of that variable, whilst relative risk ratios less than one indicate a reduced risk at higher levels of the variable.

For example, at 13-14 years, the RRR of 5.00 obtained for the comparison of the *experimental* and *low/non* antisocial groups' alcohol use indicates that the *experimental* group was 5 times more likely than *low/non* group to be moderate/high alcohol users. Similarly, the RRR of 9.78 obtained from the comparison of the *persistent* and *low/non* antisocial groups' alcohol use at 13-14 years indicates that the *persistent* group was almost 10 times more likely to be moderate/high alcohol users. Details of statistical analyses are included in Appendix 4.

Table 9 Percentage of the <i>low/non antisocial</i> , <i>experimental</i> and <i>persistent</i> groups who were moderate/high substance users at each time point, and the Relative Risk Ratios obtained from the multinomial logistic regression analyses					
	Low/Non group: % who were moderate/high users	Experimental group: % who were moderate/high users	Low/Non vs Experimental RRR	Persistent group: % who were moderate/high users	Low/Non vs. Persistent RRR
Alcohol use					
13-14 years	2.3	10.6	5.00***	18.8	9.78***
15-16 years	14.1	41.2	4.28***	51.2	6.51***
17-18 years	30.5	44.3	1.82**	68.5	4.97***
Cigarette use					
13-14 years	1.1	11.4	11.35***	28.0	34.44***
15-16 years	7.9	40.7	8.05***	46.7	10.29***
17-18 years	19.1	39.1	2.83***	70.4	10.08***
Marijuana use¹					
13-14 years	1.5	13.3	10.10***	25.7	22.76***
15-16 years	5.4	34.5	9.15***	49.5	17.03***
17-18 years	10.0	40.5	6.13***	56.5	11.71***
Other illicit substance use¹					
13-14 years	5.6	14.9	2.97**	17.5	3.59***
15-16 years	0.4	3.3	9.52***	10.9	33.73***
17-18 years	1.8	10.0	5.97***	17.4	11.35***

¹ Marijuana and illicit substance use were dichotomised into "no" use and "any" use. At 13-14 years, this denoted "no" and "any" lifetime use, while at 15-16 and 17-18 years, this referred to "no" and "any" use within the past month.
** p<0.01; *** p<0.001

As Table 9 shows, there were significant differences between the *low/non antisocial* group, and the *experimental* and *persistent* groups, on rates of moderate/high use of all types of substances and at all time points. The *persistent* group consistently reported the highest rates of substance use, the *experimental* group reported lower, but still elevated, rates of use, while the *low/non antisocial* group reported relatively low rates of use. The high RRR values indicate that group differences were very powerful, particularly for cigarette and marijuana use. In addition, although rates of illicit substance use were much lower overall, strong group differences were found for this type of substance use, most notably at 15-16 years.

Generally, for all substances, each group's rate of moderate/high use increased across adolescence. The trends at 17-18 years are of particular interest. While there was a substantial increase in rates of moderate/high use among *low/non antisocial* and *persistent antisocial* adolescents at this age, the increase in moderate/high use among *experimental* adolescents was marginal. It is noteworthy that the criteria developed to identify *experimental* antisocial behaviour specified that adolescents did not engage in high levels of antisocial behaviour at 17-18 years. Therefore the marginal increase in rates of moderate/high substance use among *experimental* adolescents coincided with their desistance from antisocial behaviour. Nevertheless, despite this marginal increase, rates of moderate/high use among this group remained high compared to the *low/non antisocial* group.

Particularly striking were the very high rates of substance use found among *persistent* adolescents, and, to a lesser extent, *experimental* adolescents. At 17-18 years, two-thirds of *persistent* adolescents were moderate/high users of alcohol and cigarettes, over half had used marijuana in the past month, while almost one in five had used other illicit substances in the past month. Even at 13-14 years, those who went on to be persistently antisocial engaged in greater moderate/high substance use, as did *experimental* adolescents.

Connections between substance use and violent and non-violent antisocial behaviour at 17-18 years of age

Next, findings relating to the question of whether there were distinct connections between specific types of antisocial behaviour, such as violent or non-violent behaviour, and substance use are reported. Groups identified at 17-18 years of age as displaying *violent-only*, *non-violent only*, and both violent and non-violent behaviour (the *dual problem* group), were compared to a *comparison* group

who did not engage in either type of antisocial behaviour at 17-18 years) on their patterns of substance use. Multinomial logistic regression analyses were again undertaken which compared the *comparison* group in turn to the *violent-only*, *non-violent only*, or *dual problem* (both violent and non-violent behaviour) antisocial groups. Details of statistical analyses are included in Appendix 5.

For these analyses, the dichotomised substance use variables (no/low use and moderate /high use) were again used. As the groups were defined according to *violent* and *non-violent* antisocial behaviour displayed at 17-18 years, only substance use at this age point was considered.

Rates of moderate/high use of each substance among *comparison*, *violent-only*, *non-violent only*, and *dual problem* individuals are shown in Table 10. As can be seen, the *dual problem* group followed by the *non-violent only* group displayed the highest levels of moderate/high use, significantly higher than that of the *comparison* group for all types of substances. Interestingly, with the exception of alcohol, rates of substance use among *violent-only* adolescents were considerably lower than those of the *dual problem* and *non-violent only* groups and not significantly different to the *comparison* group. These results suggest that *non-violent* antisocial behaviour at 17-18 years, whether or not accompanied by *violent* antisocial behaviour, was associated with substantially higher substance use.

Table 10 Percentage of the <i>comparison</i> , <i>non-violent only</i> , <i>violent-only</i> , and <i>dual problem</i> groups who were moderate/high substance users at 17-18 years, and the Relative Risk Ratios obtained from the multinomial logistic regression analyses							
	Comparison group %	Dual Problem group %	Comparison vs. Dual Problem RRR	Violent-only group %	Comparison vs. Violent-only RRR	Non-Violent-only group %	Comparison vs. Non-Violent-only RRR
Alcohol use							
17-18 years	33	78	6.90***	59	2.89**	62	3.18***
Cigarette use							
17-18 years	10	52	14.32***	16	n.s.	41	7.71***
Marijuana use¹							
17-18 years	23	71	6.50***	38	n.s.	70	9.42***
Other illicit substance use¹							
17-18 years	4	27	11.44***	6	n.s.	16	5.61***

¹ Marijuana and illicit substance use were dichotomised into 'no' and 'any' use within the past month.
 ** p<0.01; *** p<0.001

In summary, there were substantial connections between adolescents' tendency to engage in antisocial behaviour and in substance use at the same point in time. Connections between antisocial behaviour and alcohol and cigarette use were particularly evident. *Highly antisocial* adolescents consistently reported greater use of all substances, and much lower rates of non-use than *low/non antisocial* adolescents. Additionally, across all ages and substances, more *highly antisocial* adolescents reported moderate and high levels of use. Notably, a majority of the adolescents who were *highly antisocial* at 17-18 years of age reported using almost all types of the substances assessed. Overall then, there was a strong contemporaneous association between engagement in antisocial behaviour and use of substances.

Adolescents who were persistently highly antisocial across adolescence as well as adolescents who engaged in high levels of antisocial behaviour in early adolescence and then desisted, also consistently engaged in greater use of all types of substances from 13 to 18 years, by comparison with adolescents who were never involved in highly antisocial behaviour. Generally, rates of moderate/high substance use increased across adolescence, so that by 17-18 years a considerable majority of *persistent* adolescents also engaged in substance use.

Thus, at each time point and across all substance types, significant differences in the rates of moderate/high use were evident between the *low/non antisocial* group and the two antisocial groups. *Persistent* adolescents reported the highest rate of moderate/high use, followed by *experimental* adolescents, with a relatively low proportion of *low/non antisocial* adolescents engaging in moderate/high use.

Interestingly, at 17-18 years there was only a slight increase in the proportion of *experimental* adolescents engaging in moderate/high use, coinciding with their desistance from antisocial behaviour. It was also noteworthy that *persistent* antisocial behaviour was strongly associated with moderate/high substance use, and that moderate/high use became increasingly common among these individuals over adolescence. Thus, consistent moderate-high substance use appeared to be associated with the continuation of antisocial behaviour over adolescence.

Groups of 17-18 year old adolescents who engaged in *violent-only*, *non-violent only*, both violent and non-violent antisocial behaviour (*dual problem* group) and neither type of antisocial behaviour (*comparison* group) were compared on all types of moderate/high substance use at 17-18 years of age. The *dual problem* and *non-violent only* reported significantly greater use of all substances, while the *violent-only* group reported significantly higher alcohol use than the *comparison* group. Thus, it seemed that that *non-violent* antisocial behaviour, whether or not accompanied by *violent* antisocial behaviour, was associated with substantially higher involvement in all types of substance use, while there may be a more specific association between alcohol use and violence.

Early substance use as risk factor for later antisocial behaviour

A second important question concerns whether early substance use in the absence of antisocial behaviour is a risk factor for the later development of antisocial behaviour. This next section examines the links between substance use at age 13-14 years and antisocial behaviour at 15-16 and 17-18 years.

Preliminary investigations of moderate/high substance use patterns at each time point revealed that few adolescents used a single substance only, i.e. most were multi-substances users (see Appendix 6 for further details). For example, at 13-14 years, over 75 per cent of those who used cigarettes at moderate/high levels were also using another substance at these levels. For this reason, the next section, which investigates early substance use as a risk factor for antisocial behaviour, focuses on multi-substance use, rather than specific substances. Thus, the findings regarding multi-substance use are reported here, and those pertaining to specific substance types⁴⁰ are contained in Appendix 7.

Multi-substance use was defined as the use of 2 or more substances at moderate/high levels at 13-14 years. High levels of antisocial behaviour at 13-14 years were defined as engagement in 3 or more different types of antisocial behaviour in the past 12 months (see page 10 for further details). Adolescents were categorised into four groups (see Table 11):

- multi-substance users who were not highly antisocial (*multi-substance use only*),
- highly antisocial but not multi-substance users (*antisocial-only*),
- a *co-occurring* group who were multi-substance users and also highly antisocial, and
- a *neither* group who were not multi-substance users and were not highly antisocial.

Antisocial and substance use behaviour	13-14 years	
	N	%
Neither	1175	86.5
Multi-substance use only	28	2.1
Antisocial-only	103	7.7
Co-occurring	52	3.8

Pathways between substance use and antisocial behaviour were investigated by examining the four groups' subsequent patterns of substance use and antisocial behaviour at 15-16 years and 17-18 years, to establish whether problem behaviours persisted, desisted or diversified. To do this, the same criteria were used to form groups displaying differing combinations of multi-substance use and antisocial behaviour at these later ages. Then, across-time patterns were charted, and stability and change in patterns of multi-substance use and antisocial behaviour investigated, allowing questions such as the following to be answered: did the *multi-substance use only* group maintain or cease multi-substance use, and did they begin involvement in antisocial behaviour? The focus is particularly on the *multi-substance use only* group, to investigate the possibility of across-time connections between early substance use at 13-14 years and antisocial behaviour at 15-16 or 17-18 years.

However, as shown in Table 11, it is important to note that there were very few multi-substance using adolescents who were not also involved in antisocial behaviour in early adolescence (13-14 years), suggesting that the pathway from early multi-substance use only to later antisocial behaviour would be quite uncommon. Given the small group sizes, investigations of the personal and environmental risk factors that might be associated with progression along particular pathways (for example, from early multi-substance use to later antisocial behaviour) were not possible, as had originally been intended.

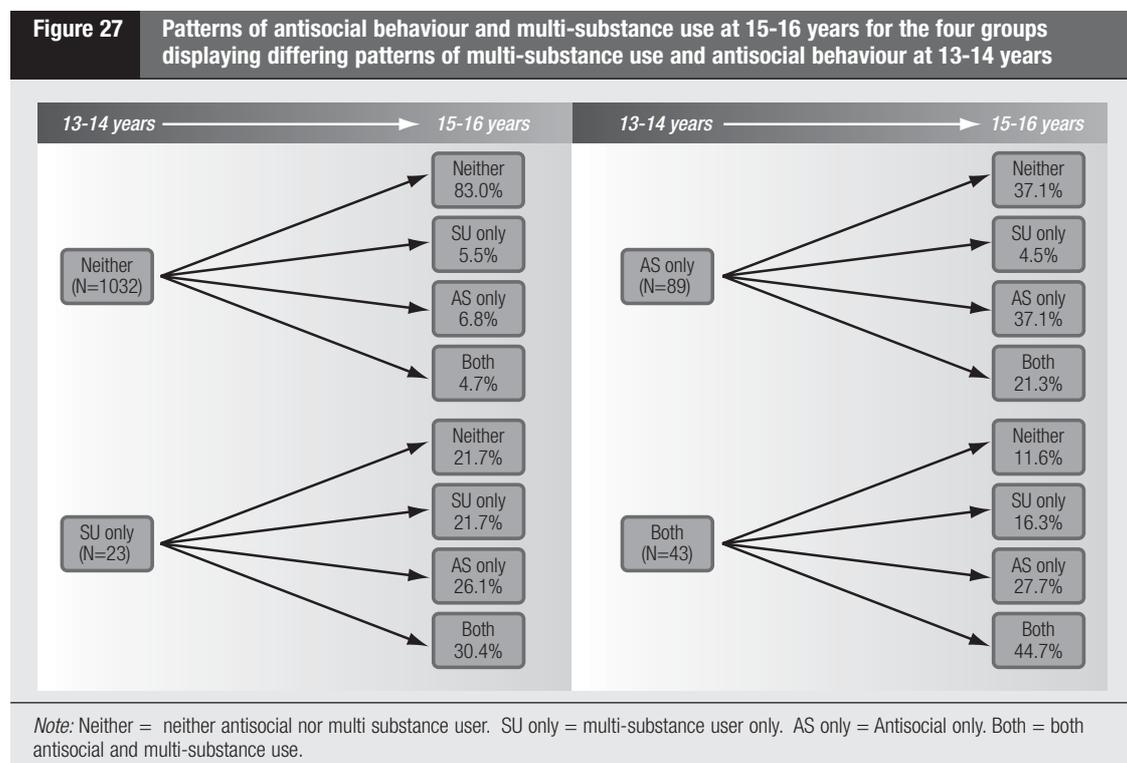
⁴⁰ The analyses of connections between early use of particular substances and later antisocial behaviour revealed very similar findings to those found for multi-substance use.

Patterns of antisocial behaviour and substance use at 15-16 years for the four multi-substance use/antisocial behaviour groups formed at 13-14 years are displayed in Figure 27. As can be seen, the great majority (83 per cent) of adolescents who were *neither antisocial nor multi-substance users* at 13-14 years continued not to engage in either problem behaviour at 15-16 years. Approximately 6 per cent had engaged in multi-substance use only, while 11.5 per cent engaged in antisocial behaviour (approximately 7 per cent were antisocial only and 5 per cent were antisocial and multi-substance users).

Of those who were *antisocial-only* at 13-14 years, approximately one-third (37 per cent) were problem-free at 15-16 years. Almost 60 per cent continued to engage in antisocial behaviour, with about one-third of these adolescents also commencing multi-substance use at 15-16 years. Interestingly, very few (only 4.5 per cent) had desisted from antisocial behaviour and taken up multi-substance use. Thus, while approximately one quarter of adolescents who were *antisocial-only* in early adolescence were multi-substance users at 15-16 years, most of these individuals continued to be involved in antisocial behaviour.

As mentioned above, the group of particular interest, those who were *multi-substance users-only* at 13-14 years, was a small group (N=28, just over 2 per cent overall). Over half (52 per cent) progressed to antisocial behaviour at 15-16 years, with the majority doing so in association with continued multi-substance use. On the other hand, one fifth were problem-free and a similar proportion continued to be multi-substance users but did not progress to antisocial behaviour at 15-16 years.

Finally, most individuals in the *co-occurring* group (88 per cent) continued to engage in some type of problem behaviour at 15-16 years. Over 70 per cent engaged in antisocial behaviour, with the majority of these adolescents continuing also to be multi-substance users. Relatively few were only multi-substance users in mid adolescence (16 per cent). Notably, in comparison to the single problem groups (*antisocial-only* and *multi-substance use only*), few had entirely desisted from these types of problem behaviours (12 per cent).



Patterns of antisocial behaviour and substance use at 17-18 years for the four multi-substance use/antisocial behaviour groups formed at 13-14 years are displayed below in Figure 28. While it would be interesting to track patterns of stability and change from 13-14 to 15-16, then from 15-16 to 17-18 years, the small group sizes precluded these more detailed analyses (for example, there were only 4 individuals on the trajectory of multi-substance use only at 13-14 to multi-substance use only at 15-16, too few to examine diverging trends from 15-16 to 17-18 years).

Three-quarters of adolescents who were *neither antisocial nor multi-substance users* at 13-14 years continued to not engage in either problem behaviour at 17-18 years. This is a slight decrease compared to the trends found at 15-16 years. Approximately 14 per cent were *multi-substance users only* at 17-18 years (more than double the rate found at 15-16 years), while approximately 11 per cent engaged in antisocial behaviour (approximately 5 per cent were *antisocial-only* and 6 per cent were both *antisocial and multi-substance users*).

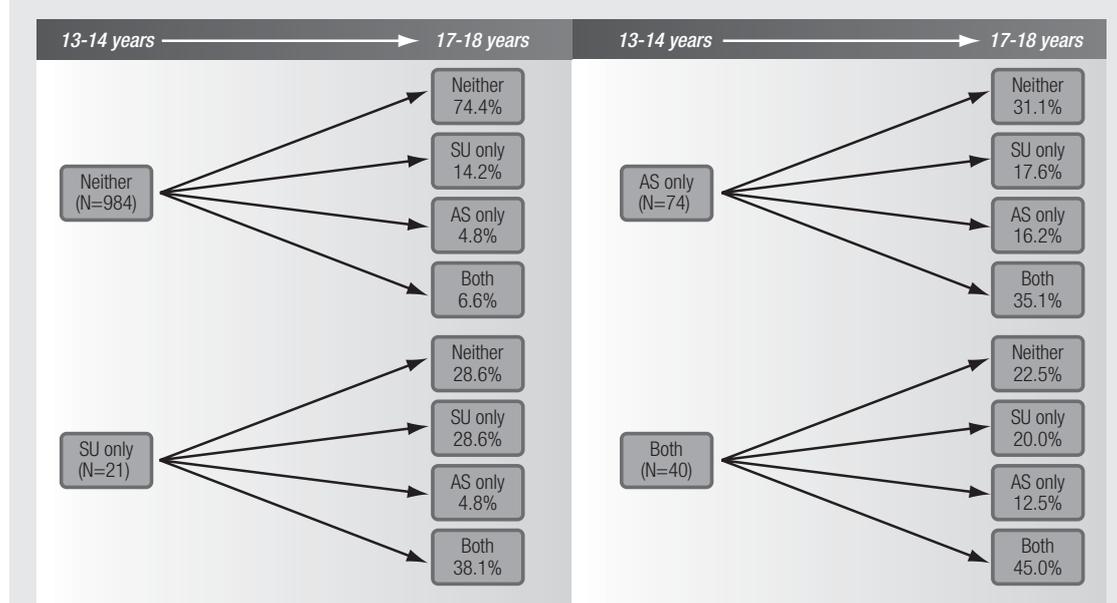
Approximately 30 per cent of the *antisocial-only* group did not engage in multi-substance use or antisocial behaviour at 17-18 years. Almost one fifth (18 per cent) were no longer involved in antisocial behaviour at 17-18 years, but reported engaging

in multi-substance use (a higher rate than found at 15-16 years). About half continued to engage in antisocial behaviour at 17-18 years, with a third of those who continued to engage in antisocial behaviour also now engaging in multi-substance use.

Of the small *substance use-only* group, the group of particular interest, over one-quarter displayed neither problem behaviour at 17-18 years, which was slightly higher than at 15-16 years. Close to 30 per cent continued to be *multi-substance users only* at 17-18 years, a marginally stronger trend than found at 15-16 years. Over 40 per cent were involved in antisocial behaviour, a substantial but slightly less powerful trend to that found at 15-16 years. Almost all of those who were involved in antisocial behaviour at 17-18 years also engaged in multi-substance use, with only 5 per cent found to engage in antisocial behaviour alone.

Less than a quarter (22.5 per cent) of the *co-occurring* group were problem-free at 17-18 years. Few (12.5 per cent) engaged only in antisocial behaviour at 17-18 years, half the rate found at 15-16 years. Close to half (45 per cent) continued to engage in both problem behaviours at 17-18 years. One-fifth had desisted from antisocial behaviour but were still involved in multi-substance use. While fewer of the *co-occurring* group had entirely desisted from these types of problem behaviours than the single problem groups (*antisocial-only* or *substance use-only*), this trend was less powerful than at 15-16 years.

Figure 28 Patterns of antisocial behaviour and multi-substance use at 17-18 years for the four groups displaying differing patterns of multi-substance use and antisocial behaviour at 13-14 years



Note: Neither = neither antisocial nor multi substance user. SU only = multi-substance user only. AS only = Antisocial only. Both = both antisocial and multi-substance use.

In summary, close to half of the adolescents who were *multi-substance users only* at 13-14 years engaged in antisocial behaviour at 15-16 and 17-18 years (52 and 43 per cent respectively), suggesting that multi-substance use was a strong risk factor for the development of antisocial behaviour. However, the *multi-substance use only* group was small in size (N=28), suggesting that while this pathway was powerful, it was uncommon. Additionally, the majority of these individuals continued to engage in multi-substance use in later adolescence, confirming that early adolescent multi-substance use was a powerful risk factor for later substance use. It was also notable that over half of those who progressed to antisocial behaviour maintained involvement in multi-substance use, a trend that was particularly marked at 17—18 years, indicating that the development of antisocial behaviour occurred in association with continued substance use.

A substantial proportion of individuals who were *antisocial-only* at 13-14 years were multi-substance users at the later time points, suggesting that there was also a pathway from antisocial behaviour to substance use. This trend was particularly noticeable at 17-18 years (26 per cent of this group were multi-substance users at 15-16 years and 53 per cent at 17-18 years). The uptake of multi-substance use among these individuals tended to occur alongside the continuation of antisocial behaviour, with few found to have switched to multi-substance use only. The size of the *antisocial-only* group (N=103) was larger than the *substance-use only* group, suggesting that this pathway was more common than the pathway from substance use to antisocial behaviour.

Adolescents who engaged in both multi-substance use and antisocial behaviour at 13-14 years (N=52) had a very high continuity of problem behaviour, with only 12 per cent at 15-16 years and 22.5 per cent at 17-18 years found to have desisted

from both types of problem behaviours. Close to half of this group continued to be involved in both antisocial behaviour and multi-substance use at 15-16 and 17-18 years. At 15-16 years, slightly more had desisted from substance use than antisocial behaviour (28 per cent were antisocial only and 16 per cent were multi-substance users only). This trend was reversed at 17-18 years, with more (20 per cent) engaging in substance use only than antisocial behaviour only (12.5 per cent).

The *neither problem* group (N=1175) showed strong stability of behaviour at 15-16 and 17-18 years, with close to 80 per cent reporting no engagement in antisocial behaviour or substance use.

At 15-16 and 17-18 years, approximately one third of the single problem groups (*antisocial-only* and *substance use-only*) appeared to have desisted and were problem-free. However, fewer in the *co-occurring* group (both highly antisocial and multi-substance users at 13-14 years) were problem-free in mid or late adolescence, indicating a higher stability of problem behaviour when substance use and antisocial behaviour co-occurred in early adolescence.

Relationship between adolescents' antisocial behaviour and substance use and their friends' antisocial behaviour and substance use

The final issue addressed is the relationship between an individual's pattern of antisocial behaviour and substance use and the prevalence of these behaviours among his/her close friends. As described earlier, adolescent substance use and antisocial behaviour are strongly influenced by the behaviour of peers (Dishion et al. 1995; Dishion and Owen 2002). However, whether there are particular connections between an individual's substance use and/or antisocial behaviour and that of his/her close friends remains unclear. As in previous sections, similarities between adolescents' own substance use and antisocial behaviour, and their friends' engagement in these behaviours at the same point in time are first described. Next, the frequency of friends' substance use and/or antisocial behaviour among groups displaying differing across-time patterns of antisocial behaviour (from 13 to 18 years) is investigated.

Relationship between friends' antisocial behaviour and substance use and adolescents' antisocial behaviour and substance use behaviour at the same point in time

To investigate the relationship between friends' antisocial behaviour and substance use and adolescents' engagement in these behaviours at the same point in time, the groups formed for the investigation of early substance use as a risk factor of antisocial behaviour were used (described on page 54). Thus, at 13-14 and 15-16 years, four groups were identified:

- multi-substance users but not highly antisocial (*multi-substance use only*),
- highly antisocial but not multi-substance users (*antisocial only*),
- multi-substance users and also highly antisocial (*co-occurring*), and
- neither multi-substance users nor highly antisocial (*neither*).

Next, groups were formed to describe the levels of substance use and antisocial behaviour among adolescents' close friends at 13-14 and 15-16 years. The following four groups were formed:

- one or more friends had "sometimes" or "often" engaged in substance use (alcohol, cigarette or marijuana use), and no friends had "sometimes" or "often" engaged in antisocial behaviour (*substance using friends only*),
- one or more friends had "sometimes" or "often" engaged in antisocial behaviour (frequent fighting, or breaking the law), but no friends had "sometimes" or "often" engaged in substance use (*antisocial friends only*),
- one or more friends had "sometimes" or "often" engaged in both antisocial behaviour and substance use (*both AS and SU friends*),
- no friends had "sometimes" or "often" engaged in antisocial behaviour or substance use (*problem-free friends*).

The frequency of differing patterns of substance use and/or antisocial behaviour among adolescents' close friends is shown below in Table 12.

Finally, the relationship between adolescents' own substance use and antisocial behaviour and their friends' engagement in these behaviours at the same point in time was investigated. Findings are first presented for 13-14 years of age (Table 13).

Friends' substance use and antisocial behaviour	13-14 years	15-16 years
Problem-free friends	29.9	12.9
Substance use only friends	8.9	21.6
Antisocial only friends	28.5	8.8
Both antisocial and substance using friends	32.7	56.7

As is shown, one third of adolescents who did not engage in antisocial behaviour or substance use (the *neither problem* group) reported that their friends also did not engage in these behaviours, a considerably higher proportion than found for the other three groups. In contrast, approximately two thirds of *antisocial only* and *multi-substance use only* adolescents, and over 90 per cent of adolescents who were involved in both types of behaviour (the *co-occurring* group) reported that their friends engaged in both substance use and antisocial behaviour.

It is also interesting that more *multi-substance use only* than *antisocial only* adolescents reported that their friends engaged only in substance-use, while more *antisocial only* than *multi-substance use only* adolescents reported that their friends engaged only in antisocial behaviour. However, both these single problem groups had similar rates of friends who engaged in both types of problem behaviours. These trends suggest that the two single problem groups could be partially differentiated by their friends' behaviour.

Table 13		Relationship between ATP adolescent's substance use and/or antisocial behaviour and friends' substance use and/or antisocial behaviour at 13-14 years (per cent)			
		Friends' substance use and antisocial behaviour			
		Problem-free	Substance use only	Antisocial only	Both antisocial and substance users
ATP adolescent's substance use and antisocial behaviour	Neither (N = 1112)	33.9	9.6	30.4	26.1
	Multi-substance use only (N = 27)	3.7	11.1	14.8	70.4
	Antisocial only (N = 99)	6.1	3.0	25.3	65.7
	Co-occurring (N = 50)	2.0	4.0	0	94.0

At 15-16 years, as shown in Table 14, over four fifths of *neither problem* adolescents (84 per cent) reported that one or more friends had engaged in at least one of these problem behaviours, a sizeable increase from the rate found at 13-14 years. More strikingly, almost no individuals in the *multi-substance use only*, *antisocial only*, or *co-occurring* groups had friends who were problem-free.

While all four groups reported quite high rates of friendships with adolescents who were involved in both antisocial behaviour and substance use, sizeable differences between the groups were still evident. Thus, while close to half of the *neither problem* group reported that their friends had engaged in both antisocial behaviour and substance use, approximately three-quarters of *multi-substance use only* and *antisocial only* adolescents and almost all *co-occurring* adolescents reported that their friends engaged in both types of behaviours.

More *multi-substance use only* adolescents reported that friends were only involved in substance use at this age (rising from 11 per cent at 13-14 years to 24 per cent at 15-16 years). In contrast, fewer *antisocial only* adolescents reported that their friends engaged only in antisocial behaviour at this age (decreasing from 25 per cent to 5 per cent over the two time points), with more reporting that friends engaged in both types of problem behaviours (increasing from 66 per cent to 82 per cent). Notably, almost all *co-occurring* adolescents had one or more friends who were involved in both substance use and antisocial behaviour in early and mid adolescence.

Table 14		Relationship between ATP adolescent's substance use and/or antisocial behaviour and friends' substance use and/or antisocial behaviour at 15-16 years (per cent)			
		Friends' substance use and antisocial behaviour			
		Problem-free	Substance use only	Antisocial only	Both antisocial and substance users
ATP adolescent's substance use and antisocial behaviour	Neither (N = 924)	16.2	25.5	11.0	47.2
	Multi-substance use only (N = 80)	0	23.8	1.3	75.0
	Antisocial only (N = 134)	6.7	6.7	4.5	82.1
	Co-occurring (N = 96)	0	2.1	0	97.9

Connections between persistent, experimental and low/non adolescent antisocial behaviour and friends' substance use and antisocial behaviour.

Whether individuals who displayed differing across-time patterns of *persistent*, *experimental*, and *low/non antisocial* behaviour (from 13 to 18 years) also had friends who differed in their propensity to engage in antisocial behaviour or use substances is next investigated. As before, the statistical analyses undertaken assess whether the frequency of such friendships was significant higher, or lower, than would be expected by chance.

The trends revealed in Table 15 show that there were consistent and significant differences between the *persistent*, *experimental*, and *low/non antisocial* groups in their reports of one or more friends' involvement in each type of antisocial behaviour and substance

use during early adolescence (13-14 years)⁴¹. Rates of friends' engagement in such behaviours were highest among *persistent* adolescents, somewhat lower among *experimental* adolescents, and lowest among *low/non antisocial* adolescents. There were some aspects that appeared to occur quite frequently among friends of individuals from all three groups. For example, a majority of those from all three groups reported at 13-14 years that one or more of their friends frequently engaged in fights, while friends' alcohol and cigarette use were also quite common at this age, especially among individuals from the *persistent* groups.

Table 15		Percentage of <i>low/non, experimental</i> and <i>persistent antisocial</i> adolescents who at 13-14 years reported that their friends engaged in substance use or antisocial behaviour	
Group	Percentage whose friends were involved in this type of antisocial behaviour	Percentage whose friends used this substance	
Low/non	Frequent Fighting	51.9	Alcohol 24.1
Experimental		76.5	48.2
Persistent		83.3	64.2
Low/non	Broken the law	9.8	Cigarettes 26.3
Experimental		31.0	48.8
Persistent		47.8	61.1
Low/non			Marijuana 5.7
Experimental			17.9
Persistent			31.2
Low/non	Either type of antisocial behaviour	54.0	Any type of substance use 34.9
Experimental		81.2	58.3
Persistent		87.5	73.7

Powerful differences were again found between the three groups in friends' involvement in all types of antisocial behaviour and substance use during mid adolescence (15-16 years), as shown in Table 16.⁴² Generally, the pattern of group differences was comparable to that found at 13-14 years. Many more individuals from all three groups reported that one or more close friends engaged in substance use, particularly alcohol use, at this age. It was also noteworthy that at this time point, considerable numbers of individuals from the *experimental* and *persistent* groups reported that one or more friends had "sometimes" or "often" broken the law and engaged in fighting, in addition to each type of substance use.

Table 16		Percentage of <i>low/non, experimental</i> and <i>persistent antisocial</i> adolescents who at 15-16 years reported that their friends engaged in substance use or antisocial behaviour	
Group	Percentage whose friends were involved in this type of antisocial behaviour	Percentage whose friends used this substance	
Low/non	Frequent Fighting	45.4	Alcohol 72.5
Experimental		71.9	88.6
Persistent		77.9	93.6
Low/non	Broken the law	17.2	Cigarettes 42.1
Experimental		50.0	70.5
Persistent		70.2	81.1
Low/non			Marijuana 21.4
Experimental			59.1
Persistent			58.9
Low/non	Either type of antisocial behaviour	57.5	Any type of substance use 73.2
Experimental		85.4	89.8
Persistent		89.5	95.8

41 Statistical differences between the *Low/non, Experimental*, and *Persistent* groups in the proportion who **at 13-14 years** reported that their friends broke the law, Chi-square (2) = 109.13 $p < 0.001$; friends frequently engaged in fighting, Chi-square (2) = 48.74 $p < 0.001$; friends engaged in any antisocial behaviour, Chi-square (2) = 57.53 $p < 0.001$; friends consumed alcohol, Chi-square (2) = 78.89 $p < 0.001$; friends used cigarettes, Chi-square (2) = 59.81 $p < 0.001$; friends used marijuana Chi-square (2) = 72.93 $p < 0.001$; friends used any substance Chi-square (2) = 64.51 $p < 0.001$.

42 Statistical differences between the *Low/non, Experimental*, and *Persistent* groups in the proportion who **at 15-16 years** reported that their friends broke the law, Chi-square (2) = 155.74 $p < 0.001$; friends engaged in fighting, Chi-square (2) = 53.03 $p < 0.001$; friends engaged in any antisocial behaviour, Chi-square (2) = 58.08 $p < 0.001$; friends consumed alcohol, Chi-square (2) = 28.95 $p < 0.001$; friends used cigarettes, Chi-square (2) = 70.13 $p < 0.001$; friends used marijuana Chi-square (2) = 103.52 $p < 0.001$; friends used any substance Chi-square (2) = 33.48 $p < 0.001$.

In summary, clear relationships were evident between adolescents' own engagement in antisocial behaviour and/or substance use, and their friends' engagement in such behaviours at the same point in time. At 13-14 years, as well as at 15-16 years, almost all of those who engaged in both antisocial behaviour and multi-substance use reported that their friends likewise engaged in both types of behaviour. Conversely, individuals who were not involved in either type of problem behaviour had the highest proportion of friends who also did not engage in either behaviour at the two time points.

At both time points, more *multi-substance use only* adolescents than *antisocial only* adolescents reported that their friends engaged only in substance use, suggesting some specificity in the relationship between these adolescents' behaviour and that of their friends. Additionally at 13-14 years, more *antisocial only* adolescents than *multi-substance use only* adolescents reported that friends engaged in only antisocial behaviour. However, the two single problem groups (*antisocial behaviour only* and *multi-substance use only*) were quite similar in their rate of friendships with youth who engaged in both types of problem behaviour. These findings thus suggest that the two single problem groups could be partially differentiated by their friends' behaviour.

It was also noteworthy that individuals from all four groups quite frequently had friendships with youth who engaged in both types of problem behaviours. Thus, approximately one quarter of *neither problem* 13-14 year old adolescents reported that friends had been involved in both types of behaviour, as did 47 per cent of *neither problem* 15-16 year old adolescents. Rates of such friendships were much higher among adolescents who had engaged in one or both types of problem behaviours themselves, and increased considerably over the two time points (from 13-14 to 15-16 years).

There were also powerful differences between the *low/non*, *experimental* and *persistent antisocial* groups in their reports of their close friends' involvement in each type of antisocial behaviour and substance use at 13-14 and 15-16 years. In general, rates of friends' engagement in such behaviour were highest among *persistent* adolescents, somewhat lower among *experimental* adolescents, and lowest among *low/non antisocial* adolescents. Notably, by 15-16 years, the majority of individuals from the *experimental* and *persistent* groups reported that one or more friends had broken the law and engaged in fighting, in addition to each type of substance use.

Discussion and implications

A number of questions concerning the relationship between substance use and antisocial behaviour were explored in this section. In summary, engagement in antisocial behaviour and in differing types of substance use at the same point in time was investigated, and these two types of problem behaviours were found to frequently co-occur. In addition, groups exhibiting differing across-time patterns of antisocial behaviour also differed greatly in their propensity to use substances, with those who engaged in persistent antisocial behaviour found to have the highest levels of moderate/high use of all substances, followed by experimental adolescents, while fewer low/non antisocial adolescents were found to use substances. Early adolescent multi-substance use appeared to be a powerful risk factor for the later development of antisocial behaviour, although this pathway was found to be quite uncommon. There also appeared to be a pathway from early adolescent antisocial behaviour to later multi-substance use which appeared to be more common. Individuals who engaged in both multi-substance use and antisocial behaviour in early adolescence had a particularly strong continuity of problem behaviour into later adolescence. Finally, there were powerful connections between adolescents' engagement in antisocial behaviour and/or substance use and their close friends' propensity to engage in such behaviours.

Among the conclusions and implications that may be drawn from these findings are:

Substance use was common and increased considerably over adolescence

While not the main focus of this study, some comments are offered on the patterns of substance use revealed by this sample of young Victorians. Consistent with previous research, the current findings suggest that adolescent substance use is relatively common and increases substantially over the adolescent period. This increase is particularly apparent for alcohol and cigarettes, and to a lesser extent for marijuana. For example, by 17-18 years approximately 87 per cent of adolescents reported that they had consumed alcohol in the past month. These findings support a view that substance use, particularly of alcohol and cigarettes, is common, perhaps "normal", during adolescence in the Australian context.

However, it is clear that some adolescents engage in substance use at levels that are potentially harmful. At 17-18 years, for instance, approximately one-in-five adolescents reportedly smoked cigarettes on more than half the days of the past month, which suggested an established cigarette habit by late adolescence. Also at this age, approximately 15 per cent of adolescents reported consuming alcohol on ten or more days of the past month (which corresponds to several times a week), while 6 per cent had reportedly smoked marijuana on 5 or more days in this period (equivalent to once a week). It is important for parents, teachers and policy makers to be mindful of the levels at which young engage in substance use and to be aware that high levels of substance use are associated with negative consequences in aspects such as physical and mental health, education, relationships with peers and family as well as with police.

Substance use and antisocial behaviour frequently co-occurred

The results indicated that across adolescence, there were strong concurrent relationships between antisocial behaviour and substance use. At each time point, highly antisocial adolescents compared to low/non antisocial adolescents reported greater use of all types of substances. In addition, over all time points and for all substances, more highly antisocial adolescents reported engaging in moderate/high levels of substance use than did low/non antisocial adolescents. However, the association was not absolute, as there were a number of adolescents who while engaging in antisocial behaviour did not use substances. For example, at 17-18 years, around 10 per cent of highly antisocial adolescents had not recently consumed alcohol, around 30 per cent had not smoked cigarettes, 50 per cent had not used marijuana and 80 per cent had not used other illicit drugs.

These findings are valuable given that few studies have investigated contemporaneous connections between antisocial behaviour and substance use in the Australian context. These findings are consistent with a view that antisocial behaviour and substance

Table 17 Overlap between the risk factors for persistent adolescent antisocial behaviour from 13 to 18 years and multi-substance use in mid adolescence		
Precursors	Antisocial behaviour ^a	Substance use ^b
Temperament/personality		
■ Task persistence	✓	✓
■ Negative reactivity	✓	✗
■ Activity	✓	✓
■ Approach/withdrawal	✗	✓
Behaviour problems		
■ Aggression	✓	✓
■ Hyperactivity	✓	✓
■ Anxiety	✓	✗
■ Depression	✓	✓
Social competence		
■ Assertiveness	✓	✓
■ Cooperation	✓	✗
■ Empathy	✓	✗
■ Responsibility	✓	✗
■ Self-control	✓	✓
Other personal attributes		
■ Civic mindedness/engagement	✓	✗
■ Emotional control	✓	✓
■ Sensation-seeking	✓	✓
School adjustment		
■ School readiness at 5 - 6 years	✗	✗
■ School difficulties in adolescence	✓	✓
Parenting Practices		
■ Supervision / Monitoring	✓	✗
■ Harsh discipline	✓	✓
■ Warmth of relationship	✓	✗
■ Attachment to parents	✓	✓
Parental Substance Use		
■ Father's substance use	✓	✓
■ Mother's Substance use	✓	✓
Peer Relationships		
■ Antisocial peer affiliations	✓	✓
■ Participation in organised peer activities	✓	✓
■ Attachment to peers	✓	✓
■ Friendship quality	✗	✓
■ Peer involvement	✗	✓

Notes: Antisocial behaviour = persistent antisocial behaviour between the ages of 13 and 18 years.
Substance use = multi-substance use at 15-16 years of age

use form part of a cluster of co-occurring adolescent problems (see Fagan, Weis, and Cheng 1990; Jessor and Jessor 1977; Loeber et al. 1998).

This study cannot fully determine whether this co-occurrence arose because of common risk factors shared by the two types of problem behaviour, or whether there are causal relationships between the problem behaviours. However, we were able to compare the findings of our previous investigation of the precursors of antisocial behaviour (see Vassallo et al. 2002) with the findings of a study that used ATP data to examine precursors of multi-substance use in mid adolescence (see Williams, Sanson, Toumbourou and Smart 2000). In each investigation, problem groups were compared to non-problem groups to identify risk factors for the particular type of problem behaviour. The results emerging from these analyses are summarised in Table 17, and reveal a high degree of overlap in the risk factors for each type of problem behaviour across a number of domains.

Overall, more risk factors were found for antisocial behaviour than multi-substance use, particularly in the domain of social competence, where there were more widespread differences between *persistently antisocial* adolescents and *low/non antisocial* adolescents than there were between *substance using* and *non-substance using* adolescents. In addition, some specific associations were also evident. Most notably, a more sociable or gregarious temperament style distinguished *multi-substance users* from non-users, while *persistently antisocial* adolescents were distinguished by being temperamentally more reactive and volatile than *low/non antisocial* adolescents. Thus, to a large extent, there appeared to be many risk factors common to both antisocial behaviour and multi-substance use, but some specific risk factors were also apparent.

The strong association found between antisocial behaviour and substance use in this current study highlights the fact that antisocial adolescents tend to experience a range of difficulties. This reinforces the view that antisocial individuals may require assistance in a number of areas of their lives. These findings carry important implications for intervention and prevention strategies. The high level of co-occurrence between antisocial behaviour and substance use demonstrated here and in other studies (for example, Loeber et al. 1998) suggest that broad based intervention programs are needed which can target and ameliorate a range of adolescent problem outcomes including antisocial behaviour and substance use. The use of such broad based strategies may have associated benefits, including the efficient and effective use of resources for intervention.

Differing across-time patterns of antisocial behaviour were strongly related to substance use

Rates of moderate/high substance use were significantly higher among both the *persistent* and *experimental* groups than the *low/non antisocial* group. Particularly apparent was the strong association between *persistent* antisocial behaviour and moderate/high substance use across adolescence. Thus, consistent high levels of substance use may be associated with the maintenance of antisocial behaviour across adolescence, which supports previous research indicating that problematic levels of substance use are associated with more enduring antisocial behaviours (Moffitt and Harrington 1996).

It was also found that more experimental than low/non adolescents engaged in moderate/high levels of substance use. Interestingly, however, moderate/high substance use among experimental adolescents appeared to stabilise at 17-18 years, which coincided with their desistance from antisocial behaviour. It is notable, however, that despite the stabilisation that appeared to be occurring, the extent of moderate/high use among experimental individuals remained considerably higher than low/non antisocial individuals.

These findings show that the experimental group displayed higher levels of substance use at the end of adolescence than the low/non adolescent antisocial group. However, as reported earlier in Section 2, the experimental group appeared to be progressing well in early adulthood and closely resembled the low/non adolescent antisocial group on the whole. As noted earlier on page 26, with regards to substance use, only higher levels of cigarette use significantly differentiated the experimental from the low/non antisocial group at 19-20 years. Thus, for the experimental group, it appeared that desistance from antisocial behaviour was also associated with desistance from substance use in the longer term. It will be important to continue following the progress of the experimental group to determine whether these positive developmental pathways are maintained.

Overall, the across-time similarities in levels of antisocial behaviour and substance use found among the persistent group in particular, point to the powerful connections between these two types of problem behaviours.

Both violent and non-violent antisocial behaviour were related to substance use in late adolescence

The findings revealed powerful differences in the extent of moderate/high substance use between the comparison group and the three groups displaying differing patterns of violent and non-violent antisocial behaviour at 17-18 years of age. Specifically, violent-only adolescents tended to engage in higher levels of alcohol use than comparison individuals, while dual problem and non-violent only adolescents more frequently engaged in moderate/high levels of use of all substance types.

The finding of a relationship between alcohol and violence represents a well documented finding within the literature (White, Brick and Hansell 1993). However, the relationship between violence and alcohol is complex. Previous longitudinal research has found that alcohol use predicts later violence, but also shows that aggressive behaviour is predictive of later alcohol use and alcohol-related aggression (White et al. 1993). The latter finding is interesting in terms of our previous examination of the

precursors of violent behaviour (see Smart et al. 2003), which revealed that the developmental risk factors for such behaviour included aggression as well as lower social skills and poorer emotional control. It is possible that such characteristics in combination with heavy alcohol use and situational factors may facilitate or aggravate the use of violence by these individuals. Thus, crime prevention strategies aimed at improving individuals' functioning in these domains may also have benefits in reducing alcohol use and alcohol-related violence among this particular group of adolescents.

In contrast to the violent-only group, the non-violent only group engaged more frequently in moderate/high use of all types of substances. This finding is particularly noteworthy given that we previously found few differences between the violent-only and non-violent only antisocial groups (Smart et al. 2003). This current finding, in showing that non-violent only adolescents displayed more prevalent substance use than violent-only adolescents, provides an important qualification to this previous finding. It is possible that the stronger association between non-violent only antisocial behaviour and substance use may reflect other research findings that regular substance use results in an increase in property-related crime, perhaps as a means of funding substance use (see Anglin and Perrochet 1998).

The current findings also reinforce the conclusion that violent adolescents are a diverse group. For all types of substances, rates of moderate/high use were much higher among the dual problem adolescents than violent-only adolescents, confirming once again that dual problem adolescents were much more problematic than violent-only adolescents, and further highlighting the difficulties faced by the small group who engage in both non-violent and violent antisocial behaviour. Again, a targeted prevention approach for this group would appear to be required.

While early substance use was a strong risk factor for the development of antisocial behaviour, the pathway from early substance use to antisocial behaviour was uncommon

The current examination of across-time connections between substance use and antisocial behaviour revealed a complex picture. A strong reciprocal relationship between the behaviours was found, where early substance use was a powerful risk factor for the development of antisocial behaviour, and conversely early antisocial behaviour was a strong risk factor for the development of substance use. However, the substance-use only group was small in size (N=28), indicating that while there was a powerful pathway from early adolescent substance use to later antisocial behaviour (since over half later engaged in antisocial behaviour in mid and late adolescence), it was rare. The size of the antisocial-only group on the other hand was larger (N=103), suggesting that the pathway from antisocial behaviour to substance use may be more common. It should also be noted that as substance use was not measured earlier than 13-14 years of age, the possibility that substance use in late childhood may have already exerted an influence on the development of antisocial behaviour cannot be ruled out.

These findings are consistent with previous studies which have found reciprocal across-time relationships between substance use and antisocial behaviour (see Allen et al. 1994; Mason and Windle 2002; Van Kammer et al. 1998). Overall, the current findings are consistent with the view that the relationship between substance use and antisocial behaviour is complex, and that these two types of behaviours may co-occur, and/or precede each other developmentally.

Investigation of the connections between antisocial behaviour and substance use is made difficult by the differing across-time normative trends evident for each behaviour. Epidemiological studies show that the frequency of substance use rises throughout adolescence and peaks in the mid-twenties (Spooner, Hall and Lynskey 2001). In contrast, antisocial behaviour peaks in mid-adolescence and decreases in early adulthood (Baker 1998; Bond et al. 2000).

Thus, it may not be surprising that there were few individuals who used substances in early adolescence without also engaging in antisocial behaviour. Furthermore, these normative trends may influence connections between antisocial behaviour and substance use at differing ages, for example in early adolescence and early adulthood. For instance, given the normative trends, an 'antisocial behaviour only' group could be expected to be small in size in early adulthood relative to a 'multi-substance use only' group. Additionally, given its greater prevalence in late adolescence and early adulthood, there is scope for substance use, and particular types of substance use, to play a more powerful role in the continuation of antisocial behaviour beyond adolescence, or in the late onset of antisocial behaviour. Indeed, as reported earlier on page 16, the late onset group was found to engage significantly more often in all types of substance use than the low/non antisocial and experimental groups, perhaps indicating a role for substance use in the development of antisocial behaviour among this group. Further research is needed to illuminate the across-time relationships between substance use and antisocial behaviour.

Adolescents' own antisocial behaviour and substance use were strongly related to their friends' antisocial behaviour and substance use

The findings revealed strong connections between adolescents' own antisocial behaviour and substance use and their friends' engagement in these behaviours. At 13-14 and 15-16 years, almost all adolescents who engaged in both antisocial behaviour and substance use reported that one or more friends likewise engaged in both behaviours. Sizeable majorities of the multi-substance use only and antisocial only groups also reported that their friends engaged in both behaviours. On the other hand, at both time points the group who engaged in neither behaviour had the highest proportion of friends who also did not engage in

either behaviour. Overall, the results are consistent with the findings of previous studies that have found that there is a strong relationship between peer behaviour and adolescent antisocial behaviour and substance use. The strong links shown here carry implications for prevention strategies and reinforce the potential dangers of grouping problem adolescents together for intervention purposes (see Dishion, McCord and Poulin 1999).

Of particular interest were the differences between the *multi-substance use only* and *antisocial behaviour only* groups. More *multi-substance use only* adolescents than *antisocial only* adolescents reported that their friends engaged in substance use only, while more *antisocial only* adolescents reported that their friends engaged in antisocial behaviour only. However, most adolescents in both groups reported that their friends engaged in both behaviours. Thus for the *multi-substance use only* and *antisocial behaviour-only* groups, the type of problem behaviour in which peers were involved differentiated between these groups only to a limited extent.

The current study, along with many others, has shown that peer associations are powerful risk factors for both antisocial behaviour and substance use. In addition, the current findings demonstrate that there was value in differentiating between the types of problem behaviours in which peers engage. The findings are consistent with those of White (1990), who speculated that different group processes and characteristics might determine whether a group engages specifically in substance use or antisocial behaviour. Furthermore, there may be individual characteristics that determine an adolescent's propensity to associate with specific peer groups. As suggested by Dishion and Owen (2002), close examination of the peer group processes associated with either substance use or antisocial behaviour will be necessary to disentangle the unique and shared risk factors associated with both behaviours.

Many adolescents reported antisocial behaviour and substance use among their friends

The high levels of antisocial behaviour and substance use evident among ATP adolescents' friends were somewhat unexpected. While most persistent and experimental adolescents reported that their friends engaged in antisocial behaviour and substance use, a surprisingly high proportion of low/non antisocial adolescents also reported that their friends engaged in such behaviours. Given that our previous investigations (Vassallo et al. 2002) and the general literature (see Dishion et al. 1995; Dishion and Owen 2002) suggest that antisocial peer affiliations are a particularly strong risk factor for antisocial behaviour and other problem adolescent behaviours, these findings raise an important issue concerning the characteristics and attributes that might protect low/non antisocial adolescents from the influence of such friends.

A preliminary comparison between the low/non antisocial group and the experimental and persistent groups revealed that the latter two groups more frequently reported that all of their friends engaged in antisocial behaviour and substance use, while the low/non antisocial group more often reported that only one or some, but not all, of their friends were involved in such behaviours. Thus, it is possible that having some friends who are not involved in problem behaviours may protect individuals from participating in antisocial behaviour and/or substance use. It is likely that other factors such as relationships with parents (for example, higher parental supervision, more positive parent-child relationship) and school attachment may also reduce the influence of problematic peers. Further research may help to clarify the factors that protect adolescents from the influences of such peer friendships.

In conclusion, strong links between adolescent substance use and antisocial behaviour were revealed by this study. There was a considerable overlap between the occurrence of antisocial behaviour and substance use at the same point in time. In addition, individuals who engaged in persistent antisocial behaviour from early to late adolescence had the highest rates of all types of substance use, followed by those who engaged in experimental antisocial behaviour, while adolescents who did not engage in antisocial behaviour had the lowest rates of substance use. Investigation of across-time pathways between substance use and antisocial behaviour revealed strong reciprocal pathways between the two types of behaviours. Peers' levels of involvement in antisocial behaviour and/or substance use were closely linked to adolescents' own engagement in such behaviours. The powerful association between antisocial behaviour and substance use found here serves as a reminder that antisocial adolescents frequently experience a wide range of difficulties, underlining the need for broad-based intervention programs that assist these young people in a number of areas of their lives.



**Pathways to persistent adolescent antisocial behaviour:
Why do some low risk children become antisocial adolescents?**

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Pathways to persistent adolescent antisocial behaviour: Why do some low risk children become antisocial adolescents?

A number of pathways to antisocial behaviour have been identified in this series of studies. The most common pathway appears to begin in childhood, but pathways commencing in early adolescence and early adulthood have also been found. As well, several key transition periods were identified early in each of these developmental stages during which changes in pathways occurred. Some changes were positive. For example, the Second Report revealed that many “at risk” youngsters who appeared in childhood to be on a pathway towards antisocial behaviour improved markedly in early adolescence and did not progress to persistent adolescent antisocial behaviour (Smart et al. 2003). However, other changes were for the worse. Thus, it was notable that while most persistently antisocial adolescents had a history of childhood problematic behaviour, a minority had relatively “problem-free” childhoods and first began to exhibit difficulties during early adolescence. Their progression to persistent adolescent antisocial behaviour was unexpected, and could not have been predicted from their earlier developmental histories.

This section focuses on the group of children who appeared to be low risk during childhood, but who nevertheless went on to engage in persistent antisocial behaviour during adolescence. Their across-time pathways, and the factors which may have contributed to a change in pathways, are investigated. This group is a relatively small but interesting one, and hence these findings should be viewed as exploratory, and in need of replication.

Why might low risk children engage in adolescent antisocial behaviour?

Moffitt’s theory of “life-course persistent” and “adolescent-limited” antisocial behaviour provides a persuasive explanation of the process which leads some low-risk children, who appear to be progressing well, into later adolescent antisocial behaviour (for example, Moffitt 1993; Moffitt and Harrington 1996). According to this theory, “life-course persistent” antisocial youth have an entrenched history of aggressive and disruptive behaviour, difficult temperament style, neuro-cognitive problems, less effective parenting and environmental adversity from childhood onwards. In contrast, “adolescent-limited” antisocial youth do not display these long-standing problems, but instead engage in antisocial behaviour for social and affiliative reasons. Moffitt (1993) argues that this second group imitates the antisocial behaviour of their “life-course persistent” peers as a means of displaying independence and maturity, and of gaining prestige and power.

The theory also proposes that “adolescent-limited” youth will desist from antisocial behaviour as they enter early adulthood when the rewards for prosocial behaviour begin to outweigh those for antisocial behaviour, unless these youth have become entrapped in an antisocial or criminal lifestyle and their opportunities become limited. “Life-course persistent” youth, however, will maintain engagement in antisocial and criminal behaviour into adulthood and will also more frequently experience serious mental health problems.

While there is considerable empirical support for Moffitt’s theory (for example, Moffitt, Caspi, Dickson, Silva and Stanton 1996), recent research also suggests a more complex picture. For example, there is growing evidence of a late adolescence/early adulthood antisocial pathway (see Section 2 of this Third Report; Kratzer and Hodgins 1999; Moffitt, Caspi, Harrington and Milne 2002; Raskin-White, Bates and Buyske 2001). Furthermore, three distinct early, intermediate and late onset adolescent trajectories have been identified, suggesting the existence of a number of “adolescent limited” antisocial sub-groups (Fergusson and Horwood 2002).

Additionally, although the long-term consequences of “life-course persistent” antisocial behaviour are clearly the most problematic and pose the most challenging task for crime prevention, it is becoming apparent that “adolescent-limited” antisocial behaviour may have greater adverse long-term consequences than originally thought. As noted earlier (pp. 8 of this report), Moffitt and colleagues have recently reported that young men identified as progressing along an “adolescent-limited” pathway continued to be more problematic at 26 years than their peers who had not engaged in adolescent antisocial behaviour, with higher rates of property offences, an impulsive personality style, mental health problems, substance dependence, and financial difficulties (Moffitt et al. 2002).

Similarly, males in the Cambridge Study in Delinquent Development identified as being on an “adolescent-limited” pathway tended to display a range of problem behaviours at 32 years of age, including illicit drug use, heavy drinking, involvement in fights and criminal offences (Nagin, Farrington and Moffitt 1995). Several US studies corroborate these findings, with signs of poorer adaptation in early adulthood (such as substance use, stress, psychological problems and antisocial behaviour) evident among adolescent-onset individuals by comparison with non-antisocial youth (Aguilar 2001). White, Bates and Buyske (2001) found only one difference between “life course persistent” and “adolescent-limited” groups over the age span of

25-31 years, with the persistent group higher on a sensation-seeking personality style. Thus, the term “adolescent-limited” antisocial behaviour may in some senses be a misnomer since antisocial behaviour is often ongoing, and may impact negatively on later adjustment and wellbeing, affecting the quality of life in adulthood.

In this next section, the aim is to investigate the factors associated with the onset of persistent adolescent antisocial behaviour among low-risk, previously non-problematic, children, the *low risk persistently antisocial* group. This group will also be followed forwards into early adulthood to assess whether antisocial behaviour persists or desists, and whether these youth differ in adjustment and wellbeing from a group who did not engage in antisocial behaviour during adolescence (the *low/non antisocial* group), as well a *high risk persistently antisocial* group.

Given the findings reviewed above, it is anticipated that social factors, such as antisocial peer affiliations, and close peer bonds, rather than characteristics such as temperament style or adjustment difficulties, will be particularly characteristic of the *low risk persistently antisocial* group, by comparison with the *low/non antisocial* and *high risk persistently antisocial* groups. Additionally, the *low risk persistently antisocial* group may continue to experience more difficulties at 19-20 years by comparison with the *low/non antisocial* group, although less than the *high risk persistently antisocial* group.

Methodology

Identification of “at risk” children

In the Second Report from this collaborative project, a cumulative risk index was used to identify children whose developmental histories suggested they were at risk for later involvement in persistent adolescent antisocial behaviour (for a detailed description, see Smart et al. 2003). The following individual characteristics, all measured at 11-12 years, were included in the risk index:

- Highly active temperament style (as reported by parents)
- Highly negative reactive temperament style (as reported by parents)
- Low task persistence temperament style (as reported by parents)
- Low task orientation temperament style (as reported by teachers)
- High aggression (as reported by parents, teachers and/or children)
- High hyperactivity (as reported by parents, teachers and/or children)
- Low cooperativeness (as reported by parents, teachers and/or children), and
- Low self-control (as reported by parents, teachers and/or children)

If a child was in the most problematic 25 per cent of the ATP cohort on a particular characteristic, he/she was deemed to be “at-risk” on that characteristic. A total risk score was then calculated for each child by summing the number of risks he/she possessed. As ratings from different respondents (parents, teachers, children) were counted separately, the maximum possible score on this index was sixteen.

A cut-off of 3 or more risks was used to identify children who were “at risk” for subsequent adolescent antisocial behaviour. This cut-off appeared to differentiate well between antisocial and non-antisocial individuals since approximately two-thirds (64 per cent) of *persistently antisocial* adolescents⁴³ were found to have been “at risk” children, while only about a third (36 per cent) of *low/non antisocial* adolescents⁴⁴ had been “at risk” children.

Interestingly, just over a third of *persistently antisocial* adolescents had not been identified as “at risk” children; i.e. they possessed fewer than 3 risks on the cumulative risk index. The current investigation compares this *low risk persistently antisocial* sub-group to the *low/non antisocial* group and to the *high risk persistently antisocial* sub-group to investigate:

- a) the factors which may have contributed to a change in pathways for the *low risk persistently antisocial* group,
- b) the continuation of adolescent antisocial behaviour into early adulthood, and
- c) the psychosocial adjustment and wellbeing of the three groups in early adulthood.

Thus, the following three groups were compared (see also Table 18 below):

- *low risk persistently antisocial* (N=42). This group, which engaged in persistent adolescent antisocial behaviour (antisocial behaviour at two or more time points from 13 to 18 years, including the last time point), had fewer than 3 childhood risks identified at 11-12 years;
- *high risk persistently antisocial* (N=78). This group, which engaged in persistent antisocial behaviour from 13 to 18 years, had 3 or more childhood risks;

43 **persistent** adolescent antisocial behaviour was defined as high levels of antisocial behaviour (committing three or more different types of antisocial acts within the past 12 months) at two or more time points from 13 to 18 years, including the last time point. A more detailed description of the selection methods used is given earlier on page 10.

44 **low/non** adolescent antisocial behaviour was defined as never engaging in high levels of antisocial behaviour (committing fewer than three different types of antisocial acts within the past 12 months) at all time points from 13 to 18 years.

- *low/non antisocial* (N=658). This group never engaged in high levels of adolescent antisocial behaviour. It included a range of individuals (those who had few, as well as those who had many, risks), and the average number of childhood risks for the group overall was 1.6.

Table 18 Formation of <i>low risk persistently antisocial, high risk persistently antisocial, and low/non antisocial</i> groups			
Risk score at 11-12 years	Outcome (13-18 years)		Group
3 or more risk factors ("high risk")	Persistently antisocial	→	High risk persistently antisocial: 72% male
Fewer than 3 risk factors ("low risk")	Persistently antisocial	→	Low risk persistently antisocial: 57% male
No defined number of risk factors (possible range of 0 to 16)	Low/non antisocial	→	Low/non antisocial: 36% male

Measures

The groups were compared on variables drawn from the longitudinal data set assessing child and family functioning, peer relationships and school adjustment/achievement on the thirteen survey waves from infancy to early adulthood. More detailed descriptions of the measures employed up to 17-18 years may be found in the First Report from this collaborative project (Vassallo et al. 2002), while the measures used at 19-20 years are described on pages 11 to 12 of the current Report.

FINDINGS

In the following sections, significant differences between the *low risk persistently antisocial, high risk persistently antisocial, and low/non antisocial* groups at different ages or stages of development, and across different domains of functioning, are described. Multivariate Analysis of Variance analyses were used to compare groups at each separate survey wave, with Scheffe post-hoc tests used to identify differences between specific groups⁴⁵.

Timing and extent of group differences from infancy to early adulthood

Figure 29 (page 70) summarises the timing and extent of differences from infancy to early adulthood between the *low/non antisocial* group and the *low risk persistently antisocial* group (as shown by the dark line) and the *high risk persistently antisocial* group (as shown by the light line). The Figure shows the proportion of measures at each time point on which significant group differences were found⁴⁶.

As Figure 29 shows, neither antisocial group differed from the *low/non antisocial* group on any variables in the first two years of life. The first differences were found between the *high risk antisocial* and *low/non antisocial* groups and emerged during late toddlerhood (2-3 years) and early childhood (3-4 years). Although differences at this age were relatively rare, the *high risk persistently antisocial* group was significantly more problematic on approximately 10 per cent of the measures assessed. However, from 5-6 years to early adulthood, numerous group differences were found between the *high risk persistently antisocial* and the *low/non antisocial* groups, with the *high risk persistently antisocial* group significantly more problematic on 40 to 70 per cent of the aspects measured.

The first significant differences between the *low risk persistently antisocial* and *low/non antisocial* groups emerged in early adolescence (12-13 years, Year 7 for most participants). The most extensive differences between these two groups were found at 15-16 years (mid adolescence); however group differences were still evident in early adulthood on almost one-third of the aspects assessed. At all time points, there were fewer differences between the *low risk persistently antisocial* and the *low/non antisocial* groups than between the *high risk persistently antisocial* and the *low/non antisocial* groups.

Group differences at different developmental stages

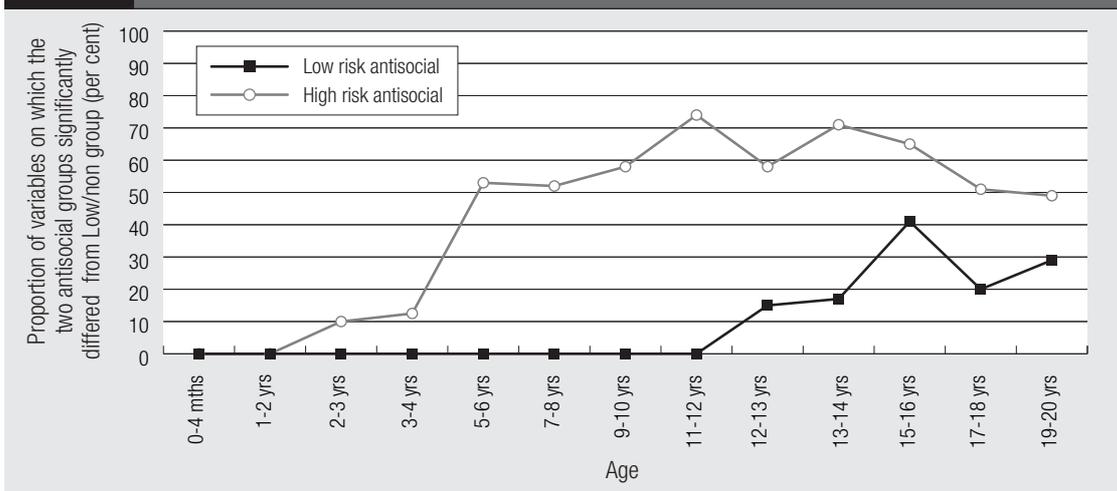
The multivariate analyses of variance used to compare the three groups assessed whether there were consistent differences between groups over a set of variables⁴⁷. Variables on which statistically significant differences were found are displayed in Figures 30 to 46, while details of the findings are provided in Appendix 8. To enable across-time and across-domain

45 Many participants have missing data at one or more survey waves, hence across-wave MANOVAs, which require no missing data, would have led to unacceptably small group sizes. To take into account the number of analyses conducted, the Bonferroni adjustment procedure was used, resulting in an adjusted significance level of $p < .0018$. Findings which were significant at the less stringent .05 level are referred to as trends, and included for reader interest, but are not referred to in the text.

46 When multi-source data was available at a particular time point (for example, parent-, teacher- and/or child report), the number of significant differences was summed across the sources.

47 If multivariate group differences were found, the individual variables were subsequently examined to identify those which contributed to the significant overall differences between groups.

Figure 29 Percentage of *low/non antisocial, experimental antisocial, and persistently antisocial* adolescents who were moderate-high alcohol users



comparisons, the variables were standardised prior to the undertaking of statistical analyses. Thus, the Figures display the three groups' mean standardised scores (z scores)⁴⁸ on the aspects which differentiated between groups.

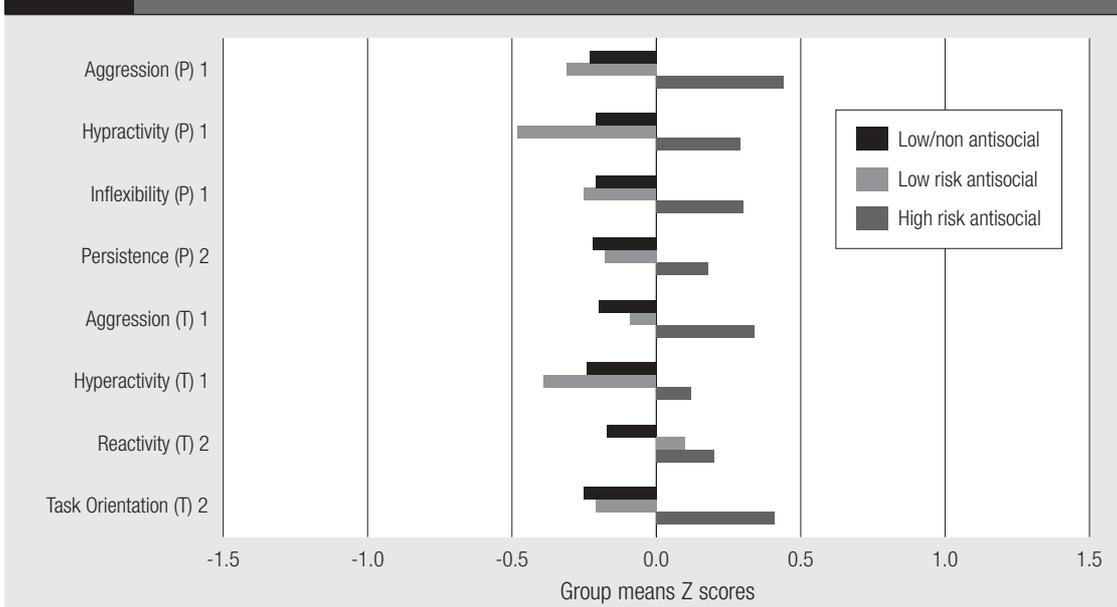
Infancy, Toddlerhood and Early Childhood

No significant overall multivariate group differences were found on the aspects of temperament, behaviour problems and family environment measured during the first four years of life. At 3-4 years, there was a trend for multivariate group differences, but the strength of these differences did not reach the adjusted significance level⁴⁹.

Mid to Late Childhood (the Primary School Years)

The *low risk persistently antisocial* and *low/non antisocial* groups were not significantly different on any variable or at any time point over the primary school years, suggesting that the two groups were very similar at this developmental stage (see Figures 30 to 34 on pages 70 to 72, and Appendix 8 for further details).

Figure 30 Group differences at 5-6 years of age

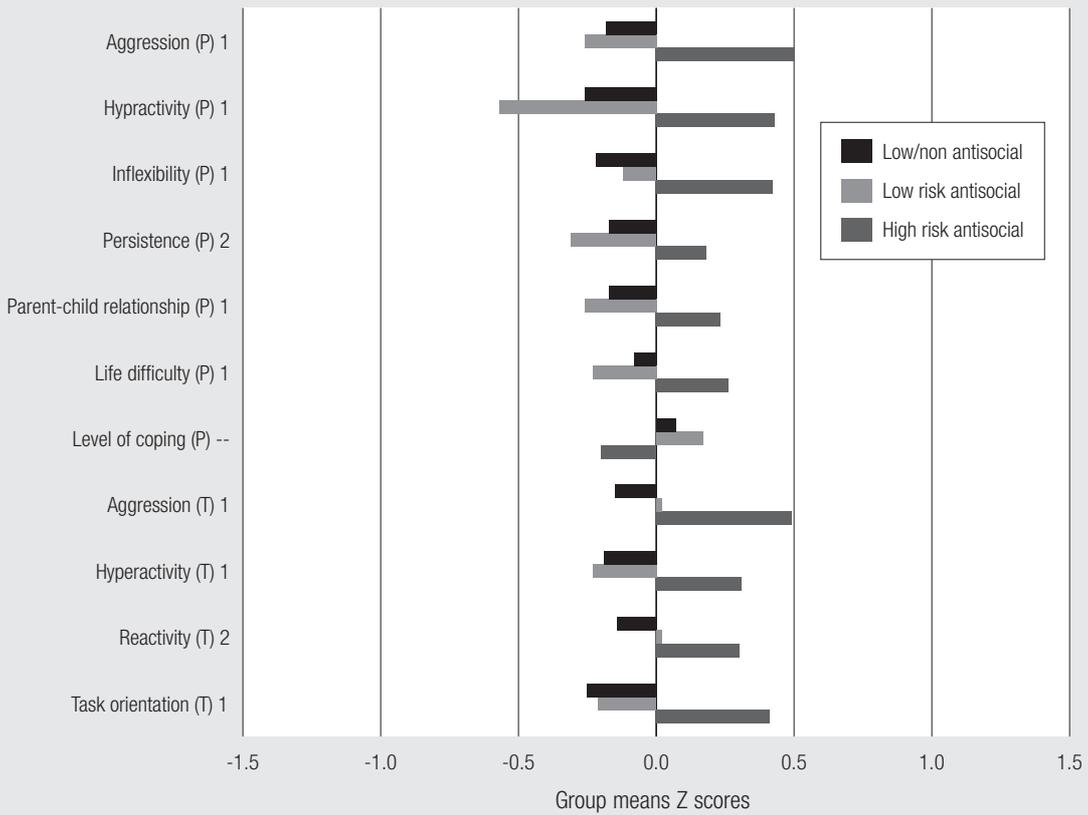


(P) = parent report (T) = teacher report
 1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the *Low/non antisocial* groups
 -- = no two groups significantly differ
 There were no significant differences on:
Parent report of approach-sociability, rhythmicity, anxiety-fearfulness, quality of parent-child relationship, and family socio-economic status at 5-6 years;
Teacher report of flexibility, anxiety-fearfulness, and school readiness at 5-6 years

48 The z score transformation makes variables comparable, as it creates new variables which all have the same midpoint and spread (a mean of 0 and a standard deviation of 1).

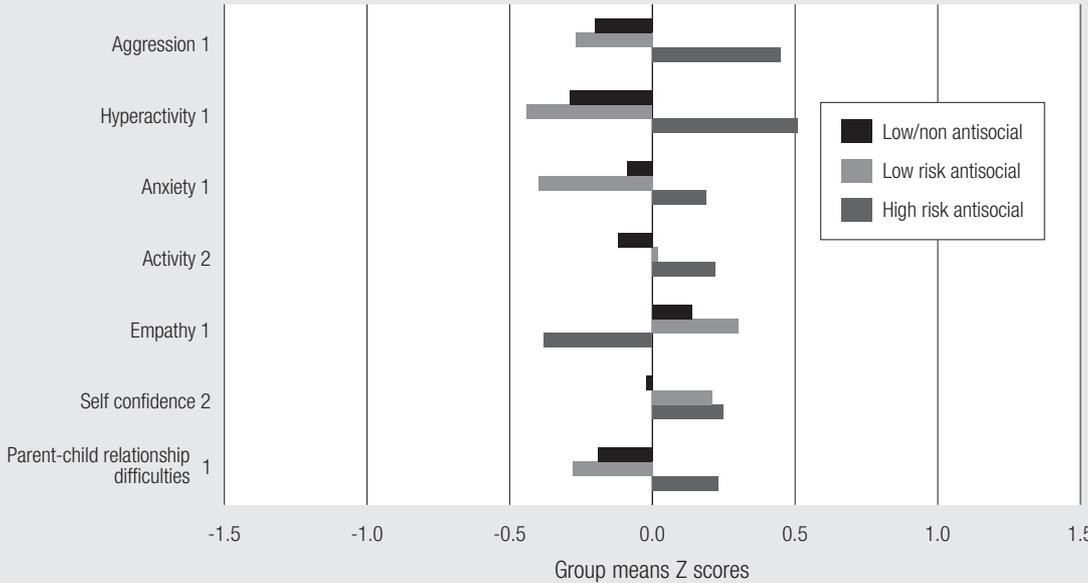
49 The Bonferroni adjustment significance level of $p < .0018$ or lower. At 3-4 years, the multivariate results were: $F(16, 1208) = 1.82, p < .024$.

Figure 31 Group differences at 7-8 years of age



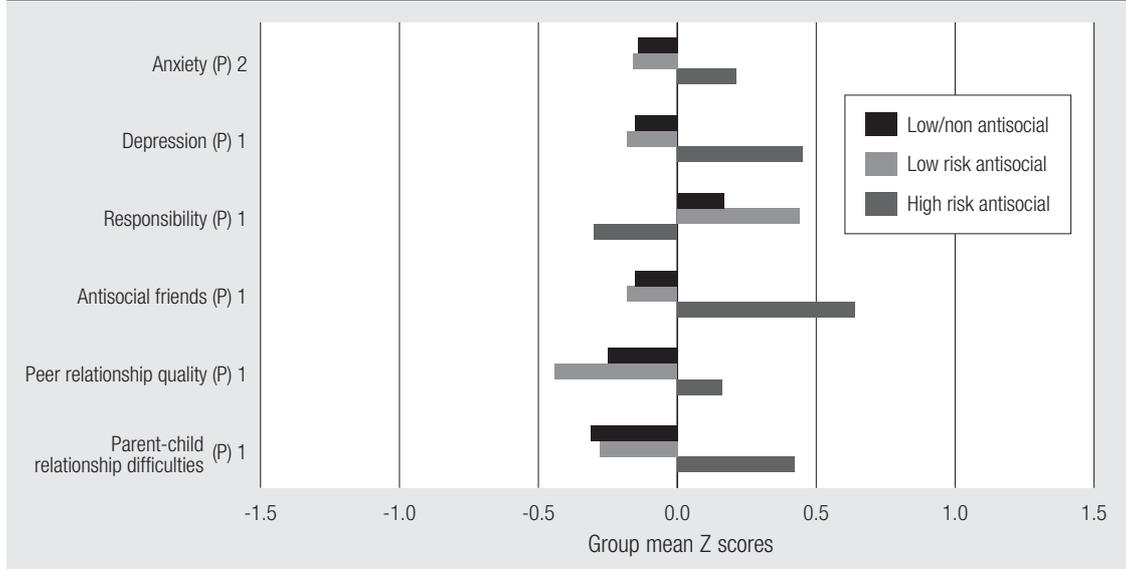
(P) = parent report (T) = teacher report
 1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and Low/non *antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the Low/non *antisocial* groups
 -- = no two groups significantly differ
 There were no significant differences on:
Parent report of approach-sociability, rhythmicity, anxiety-fearfulness, family stress, and family socio-economic status at 7-8 years; and
Teacher report of flexibility, anxiety-fearfulness, academic skills, reading ability and social skills at 7-8 years

Figure 32 Parent-reported group differences at 9-10 years of age



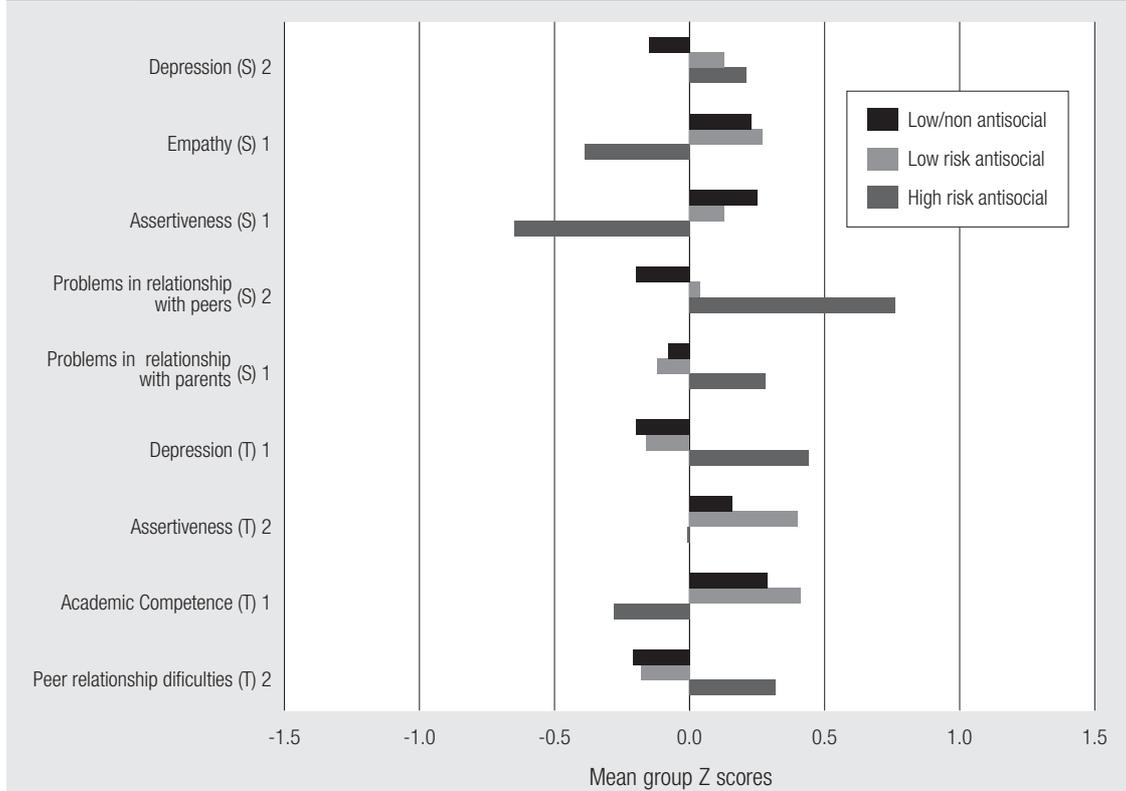
1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and Low/non *antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the Low/non *antisocial* groups
 There were no significant differences on:
Parent report of negative emotionality, shyness, sociability, quality of parent-child relationship and family socio-economic status at 9-10 years

Figure 33 Parent-reported group differences at 11-12 years of age



(P) = parent report (T) = teacher report (S) = child self report
 1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the *Low/non antisocial* groups
 -- = no two groups significantly differ
 There were no significant differences on:
Parent report of approach-sociability, assertiveness, mother's educational level, father's educational level, father's occupation, family stress, and number of children in family at 11-12 years.

Figure 34 Teacher- and child-reported group differences at 11-12 years of age



(T) = teacher report (S) = child self report
 1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the *Low/non antisocial* groups
 There were no significant differences on:
Teacher report of anxiety-fearfulness at 11-12 years; and
Child report of anxiety-fearfulness, negative and positive aspects of friendship quality at 11-12 years.

Numerous significant differences between the *high risk persistently antisocial*, and both the *low/non antisocial* and *low risk persistently antisocial* groups emerged during mid childhood⁵⁰ and continued to be evident in late childhood⁵¹. The Figures show that the *high risk persistently antisocial* group was consistently more problematic over a wide range of domains than *low/non antisocial* and *low risk persistently antisocial* groups according to parents, teachers and the children themselves.

Thus, in mid to late childhood, the *high risk persistently antisocial* group tended to be more “difficult” temperamentally, being rated by parents and teachers as more inflexible, volatile and reactive, and less persistent and less able to stay focused on tasks. They more frequently displayed externalising behaviour problems, such as higher aggression and hyperactivity. They had poorer quality relationships with parents and peers at 11-12 years (grade 6 for most), tended to be less socially skilled (less empathic and assertive) and were progressing less well at school⁵². Importantly, at 11-12 years, more of their friends were involved in antisocial activities (for example, fighting, stealing, substance use).

Early adolescence (the early secondary school years)

Trends over early adolescence are next described and are shown in Figures 35-38 on pages 74 to 76. The first differences between the *low risk persistently antisocial* and *low/non antisocial* groups emerged in early adolescence⁵³. However, only the adolescents, not their parents, reported these differences; parents continued to view *low risk persistently antisocial* adolescents as positively as did parents of *low/non antisocial* adolescents (see Figures 35 and 37).

At 12-13 years (Year 7 for most) and according to their own reports, *low risk persistently antisocial* adolescents were more aggressive, uncooperative, had lower self control and more frequently experienced problems at school than *low/non antisocial* adolescents (see Figure 36). One year later, at 13-14 years (Year 8), there were more widespread differences between the *low risk persistently antisocial* group and the *low/non antisocial* group by adolescent self-report⁵⁴, with significant group differences evident on almost half of the aspects assessed (see Figure 38). These differences were found on externalising behaviour problems (oppositional behaviour and hyperactivity), social skills (cooperation and self control), school adjustment/achievement, friendships with antisocial peers, and feelings of attachment to parents.

Turning now to the *high risk persistently antisocial* group, this group continued to be much more problematic than the *low/non antisocial* group during early adolescence according to both adolescents and parents (as shown in Figures 35 to 38). Group differences were found on the same aspects as in mid and late childhood, (i.e. on difficult temperament, externalising behaviour problems, lower social skills, poorer parent-child relationships, and antisocial peer friendships), and increased in strength during early adolescence.

Additionally, parents of *high risk persistently antisocial* adolescents reported more use of harsh or ineffective parenting practices than parents of *low/non antisocial* adolescents. Thus, they reported more harsh discipline (such as yelling, shouting, grounding), less supervision and monitoring of their adolescents’ activities and friendships, and less warmth in their relationships with their teenagers. Parents of *high risk persistently antisocial* adolescents also tended to smoke cigarettes and/or consume alcohol more often than parents of *low/non antisocial* adolescents. While no significant group differences were found on the quality of peer friendships, it was notable that the *high risk persistently antisocial* group had more frequently formed friendships with other antisocial youth and less often participated in organised peer group activities such as sporting or youth groups than the *low/non antisocial* group.

In summary, in early to mid adolescence, the *low risk persistently antisocial* group began to resemble the *high risk persistently antisocial* group, and also began to become dissimilar to the *low/non antisocial* group. Thus, in early adolescence, both antisocial groups were consistently more aggressive and oppositional, less cooperative and self controlled, and experienced more school difficulties than the *low/non antisocial* group, and in mid adolescence, more frequently associated with antisocial peers and were less attached to their parents.

There was a consistent trend, however, for the *low risk* group to be faring better than the *high risk* group at this stage, and there were significant differences between the two antisocial groups themselves on cooperativeness, self control, and school difficulties. Additionally, the *high risk* group displayed a broader array of difficulties than the *low risk* group. Thus, the *high risk* group, but not the *low risk* group, tended to be less empathic, more depressed, more attracted to risk taking, and less attached to peers.

50 Parent report at 5-6 years comparing all 3 groups: multivariate F (16, 1350) = 4.11; p < .001; Teacher report at 5-6 years comparing all 3 groups: multivariate F (14, 1220) = 2.75, p < .001; Parent report at 7-8 years comparing all 3 groups: multivariate F (24, 1362) = 3.72; p < .001; Teacher report at 7-8 years comparing all 3 groups: multivariate F (18, 1152) = 2.58, p < .001.

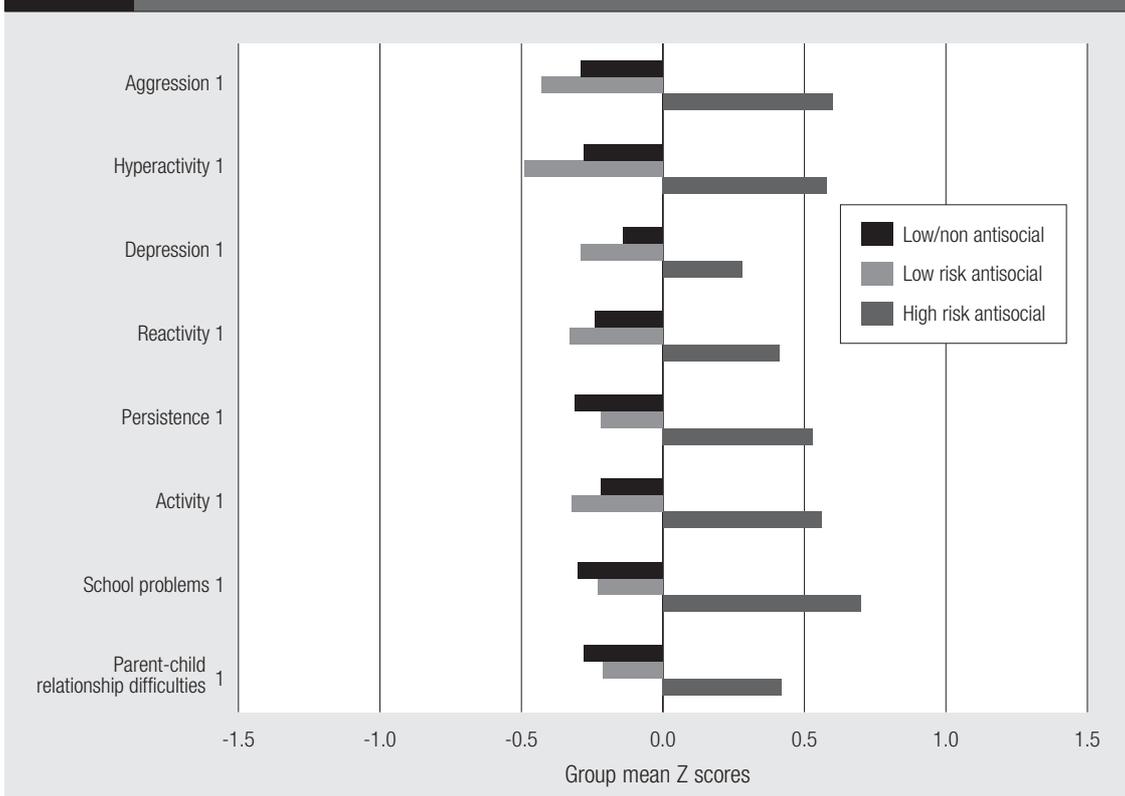
51 Parent report at 9-10 years comparing all 3 groups: multivariate F (24, 1348) = 3.89; p < .001; Parent report at 11-12 years comparing all 3 groups: multivariate F (38, 1212) = 4.58; p < .001; Teacher report at 11-12 years comparing all 3 groups: multivariate F (20, 1160) = 5.78, p < .001; Child report at 11-12 years comparing all 3 groups: multivariate F (24, 1352) = 7.51. p < .001.

52 Only a subset of variables were used at 11-12 years, as this was the time point at which the groups were selected. Hence, many measures which were used to select groups were excluded from the current analyses.

53 Parent report at 12-13 years comparing all 3 groups: multivariate F (26, 1264) = 5.67; p < .001; Adolescent report at 12-13 years comparing all 3 groups: multivariate F (26, 1220) = 7.04. p < .001.

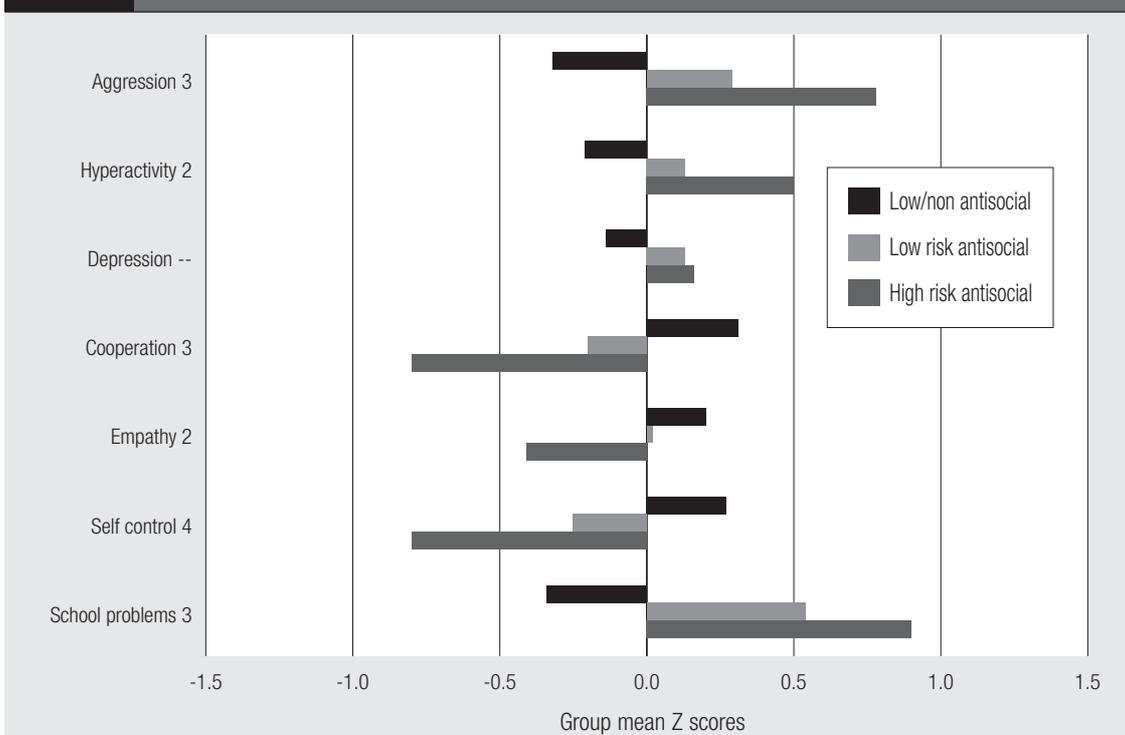
54 Parent report at 13-14 years comparing all 3 groups: multivariate F (54, 1278) = 4.62; p < .001; Adolescent report at 13-14 years comparing all 3 groups: multivariate F (30, 1322) = 10.79. p < .001.

Figure 35 Parent-reported group differences at 12-13 years of age



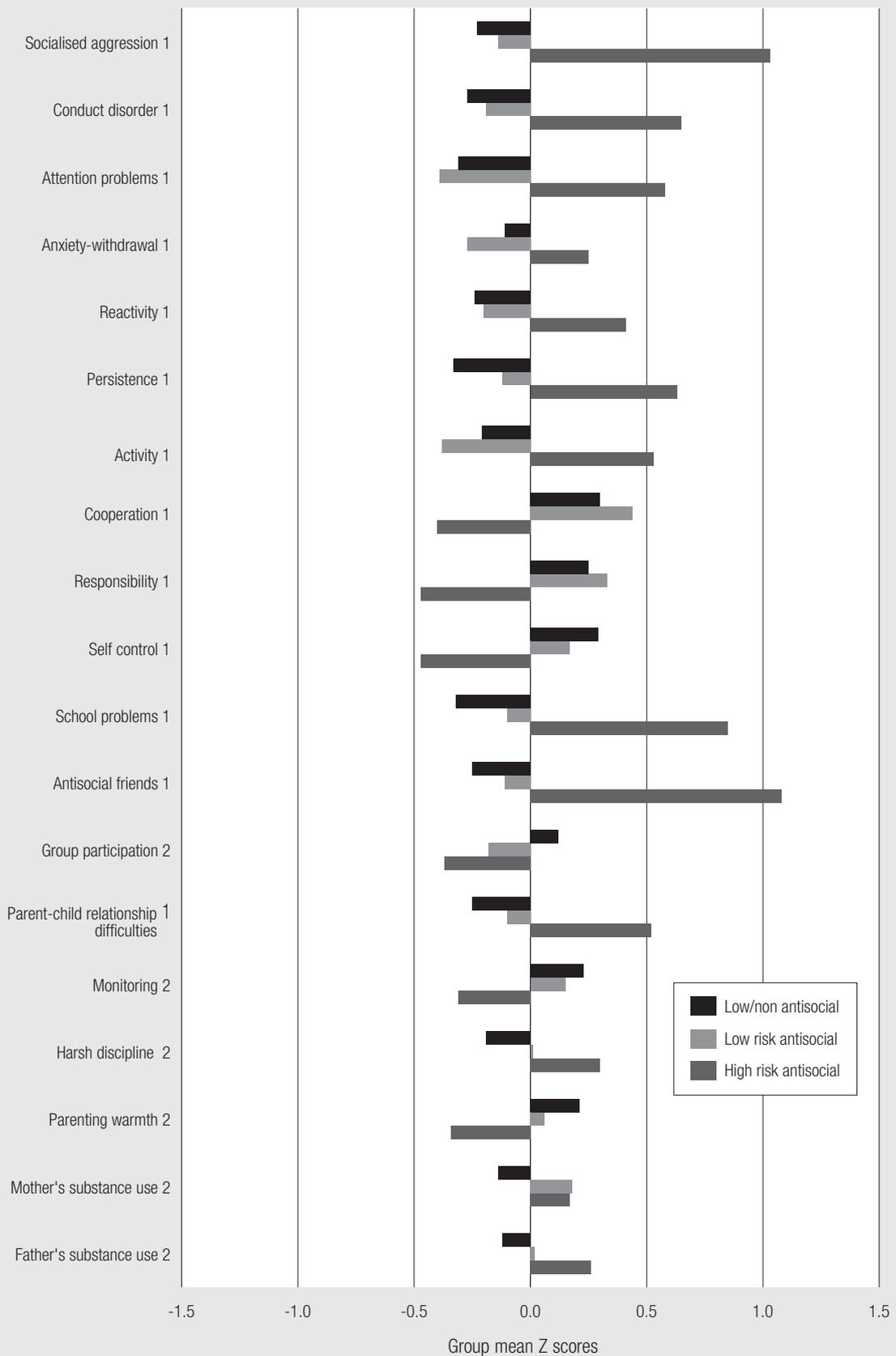
1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 There were no significant differences on **Parent report** of: anxiety-fearfulness, approach-sociability, family socio-economic status, and family stress.

Figure 36 Adolescent-reported group differences at 12-13 years of age



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the *Low/non antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group
 4 = All 3 groups significantly differed
 -- = no two groups significantly differ
 There were no significant differences on **Teenager report** of: anxiety-fearfulness, assertiveness at 12-13 years.

Figure 37 Parent-reported group differences at 13-14 years of age

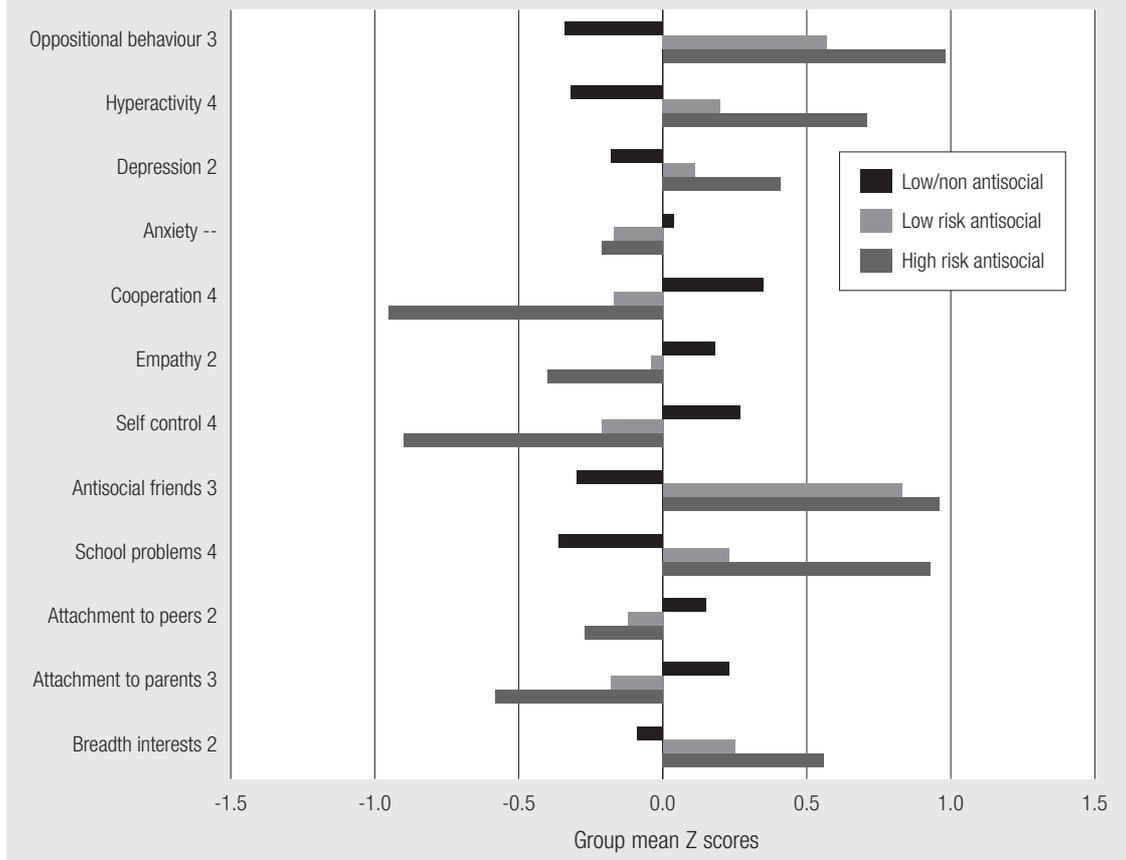


1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and Low/non *antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and the Low/non *antisocial* groups

There were no significant differences on:

Parent report of: approach-sociability, assertiveness, peer involvement, parenting style (use of inductive reasoning, physical punishment or obedience orientation), family socio-economic status, and paternal unemployment

Figure 38 Adolescent-reported group differences at 13-14 years of age



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and *Low/non antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group
 4 = All 3 groups significantly differed
 -- = no two groups significantly differ
 There were no significant differences on **Teenager report** of: friendship quality at 13-14 years.

Mid to late adolescence (the late secondary school years)

From 15-16 years onwards, there were numerous significant differences between the *low risk persistently antisocial* and the *low/non antisocial* groups, according to parents and adolescents alike⁵⁵, as shown in Figures 39-42 on pages 77 to 80.

At 15-16 years, parent reports suggested that the *low risk persistently antisocial* group was more aggressive, more difficult to get on with, less assertive, more involved with their peers, particularly antisocial peers, experienced more difficulties at school, and parents supervised their teenager's activities and companions less closely (Figure 39). Adolescents, too, reported many of the same differences, with *low risk persistently antisocial* individuals reported to be significantly more oppositional, less attached to school, and more often involved in friendships with other antisocial youth than *low/non antisocial* individuals (Figure 40). Additionally, according to adolescents, *low risk persistently antisocial* individuals tended to be more depressed, more often displayed a more "difficult" personality style (less agreeable and conscientious), and were more attracted to risk taking than *low/non antisocial* adolescents, and also were lower on "civic efficacy/responsibility" (fewer believed that members of society could, or should, act to bring about social change). This was the peak age at which differences were found between the *low risk persistently antisocial* and *low/non antisocial* groups.

Similar trends emerged two years later, at 17-18 years. Parent reports revealed that *low risk persistently antisocial* adolescents were more aggressive, less conscientious, lived in a less cohesive family environment, and were more often involved with antisocial peers than *low/non antisocial* adolescents (Figure 41). Nevertheless, according to parents, *low risk antisocial* individuals had fewer antisocial peer friendships than their *high risk antisocial* counterparts at this time. *Low risk persistently antisocial* adolescents self-reported higher levels of problem behaviours (aggression and hyperactivity), a somewhat more "difficult" personality style (less

⁵⁵ Parent report at 15-16 years comparing all 3 groups: multivariate F (46, 1348) = 5.34 p < .001; Adolescent report at 15-16 years comparing all 3 groups: multivariate F (46, 1324) = 7.72. p < .001; Parent report at 17-18 years comparing all 3 groups: multivariate F (42, 11166) = 6.05 p < .001; Adolescent report at 17-18 years comparing all 3 groups: multivariate F (58, 11436) = 6.90. p < .001

agreeable and conscientious), a greater tendency to cope with stress by using drugs or reacting explosively, more school difficulties, and lower identity clarity (conception of the type of person they wished to become) than *low/non antisocial* adolescents (Figure 42).

Although not the main focus of this section, the extensive and widespread differences found between the *high risk persistently antisocial* and the *low/non antisocial* groups in mid and late adolescence are briefly described. As shown earlier in Figure 29 (page 70) reveals, these two groups differed on approximately two-thirds of the aspects assessed at 15-16 years, and on half of the aspects assessed at 17-18 years. In general, the group differences found at earlier ages were again evident during mid and late adolescence.

Thus, according to parents, the *high risk persistently antisocial* group consistently displayed more difficult temperament and personality characteristics (more reactive, less persistent, more active, less agreeable and conscientious). They were also more aggressive, had poorer social skills (were less responsible and self controlled), and more frequently experienced difficulties at school. They continued to be involved in friendships with other antisocial adolescents. As found in early adolescence, the parenting they received tended to be less effective, with more harsh discipline, lower supervision, and less warmth and greater conflict in

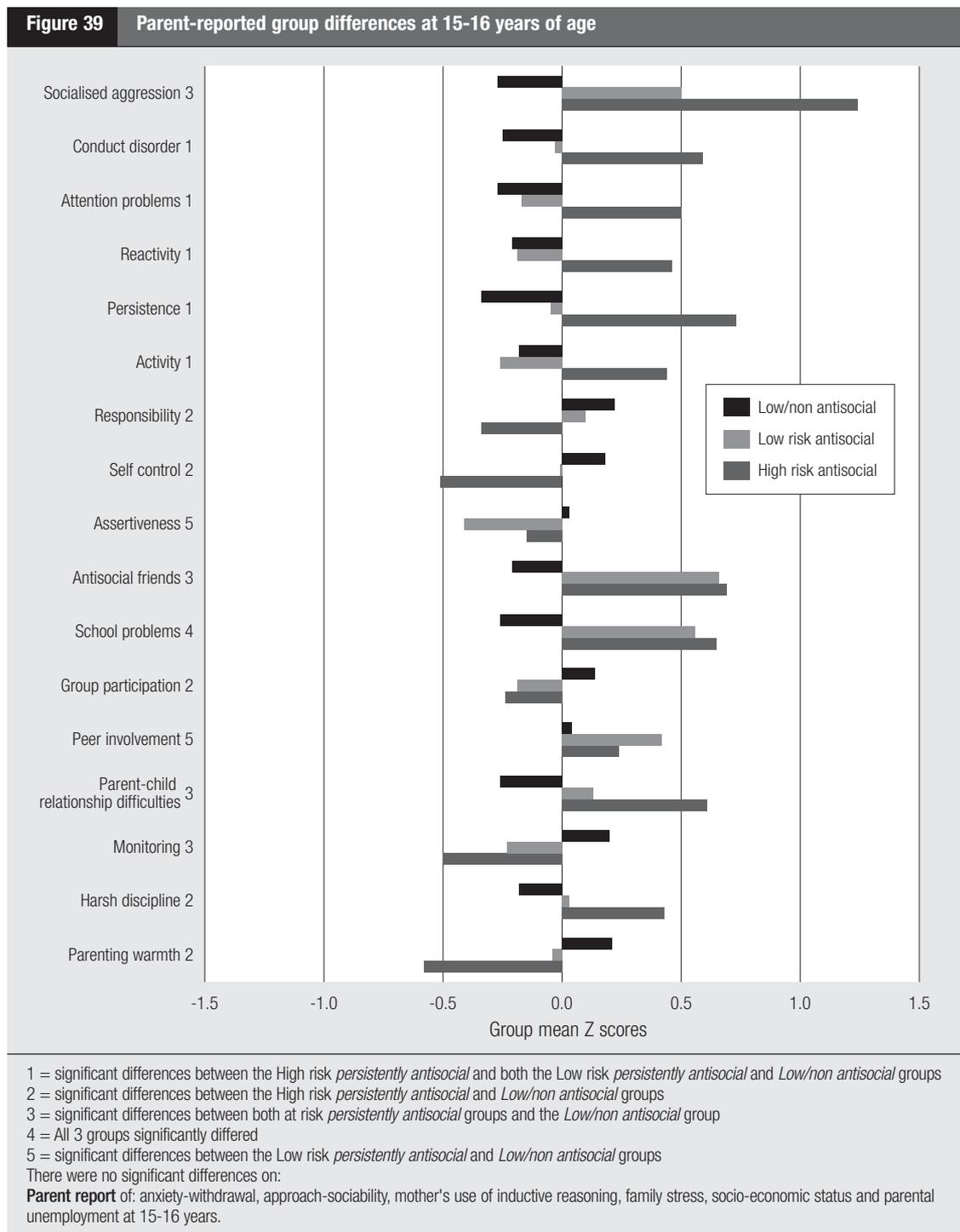
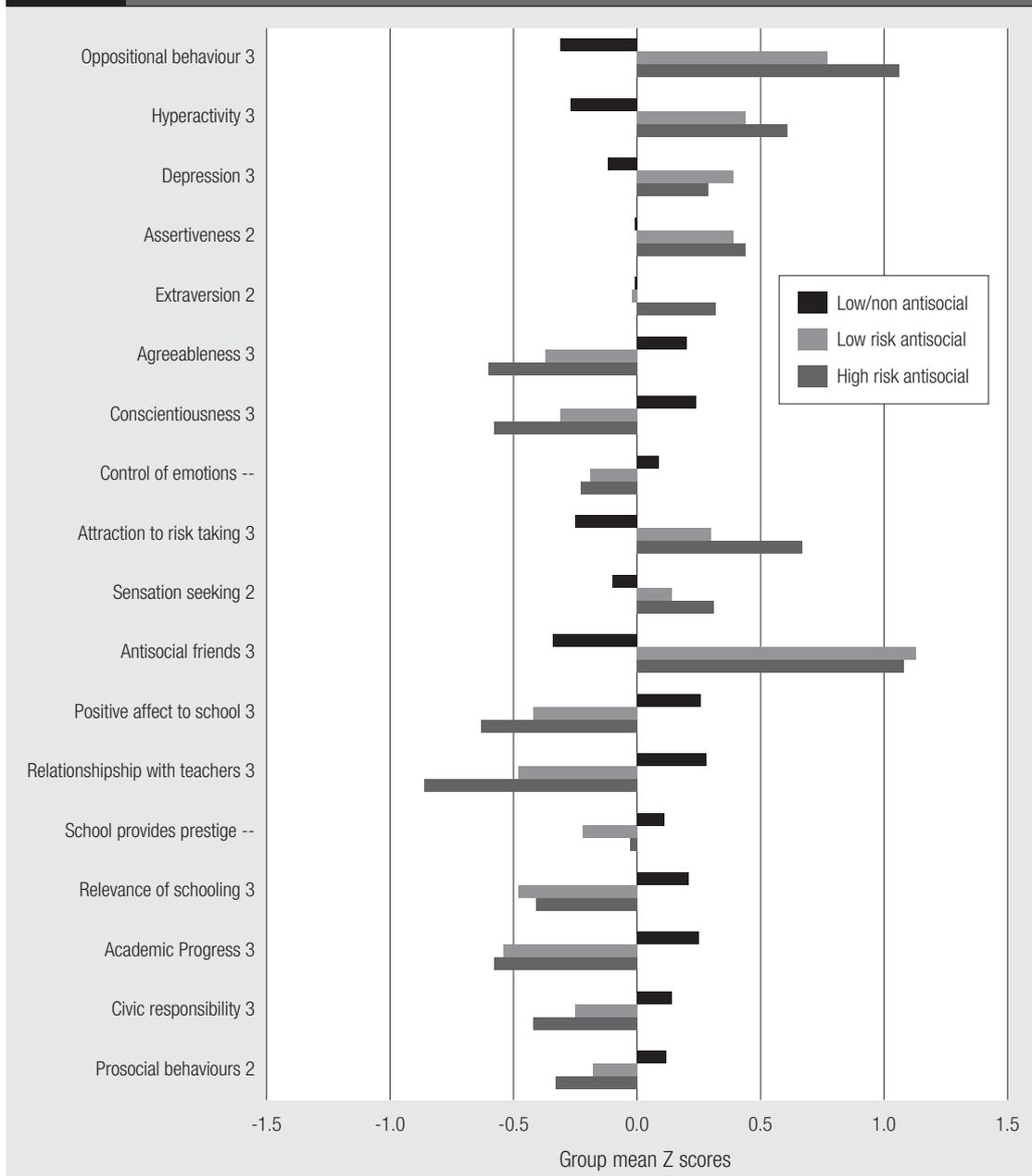


Figure 40 Adolescent-reported group differences at 15-16 years of age



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and *Low/non antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group
 -- = no two groups significantly differ
 There were no significant differences on:
Teenager report of: anxiety-fearfulness, openness to experience, friendship quality, and political activity, at 15-16 years.

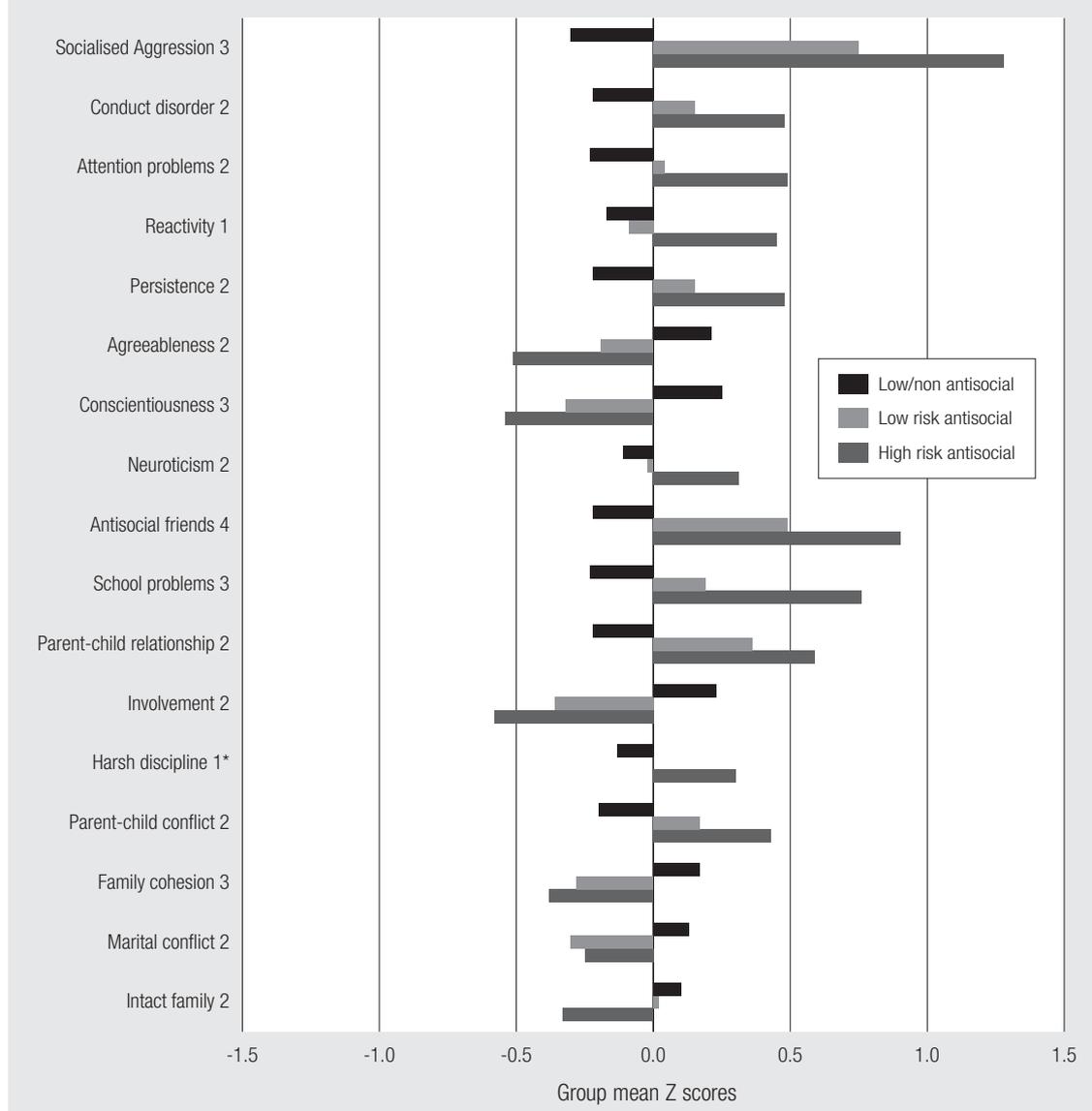
their relationships with their parents. There were also signs of a less harmonious family climate, with parents of *high risk persistently antisocial* adolescents reporting greater marital conflict and a less cohesive family environment at a child age of 17-18 years than parents of *low/non antisocial* adolescents. The adolescent self-report data generally corroborated these trends.

Overall, in mid and late adolescence, the *low risk* and *high risk persistently antisocial* groups had become similar across a large number and range of characteristics, and were significantly more problematic than the *low/non antisocial* group. Thus, there appeared to have been an increase in the difficulties experienced by the *low risk persistently antisocial* group during this time. The two antisocial groups consistently displayed similar levels of antisocial peer affiliations and school difficulties (reported by both adolescents and parents), hyperactivity, depression and assertiveness (by self report). At 17-18 years, both antisocial groups were similar in their tendency to cope with problems by using drugs, and the clarity of their conceptions about the direction they wished their lives to take, according to their own reports. In addition, the *low risk*, but not *high risk* group, was also reported to more involved with peers at 15-16 years according to parents.

However, the *high risk* group was also clearly more dysfunctional than the *low risk* group on many characteristics which had differentiated both antisocial groups from the *low/non antisocial* group. Thus, the *high risk* group displayed a wider range of externalising behaviour problems (oppositonality, aggression, conduct disorder, attention problems), were more temperamentally reactive, volatile and explosive, were less agreeable, experienced more school difficulties at 15-16 years according to parents, and had more extensive friendships with antisocial peers at 17-18 years according to parents. In addition, as seen in early and mid adolescence, the *high risk* group displayed a more extensive and a broader array of difficulties than the *low risk* group.

In summary, there were no significant differences between either of the two *adolescent antisocial* groups (*low risk* and *high risk*) and the *low/non antisocial* group over the first two years of life. The first differences emerged during late toddlerhood (2-3 years) and early childhood (3-4 years), and were found between the *high risk persistently antisocial* and *low/non antisocial* groups. From 5-6 years to early adulthood, there were numerous differences between the *high risk* and the *low/non antisocial* groups, with the *high risk persistently antisocial* group significantly more problematic on between 40 and 70 per cent of the aspects measured from 5-6 years onwards.

Figure 41 Parent-reported group differences at 17-18 years of age



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups

2 = significant differences between the High risk *persistently antisocial* and *Low/non antisocial* groups

3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group

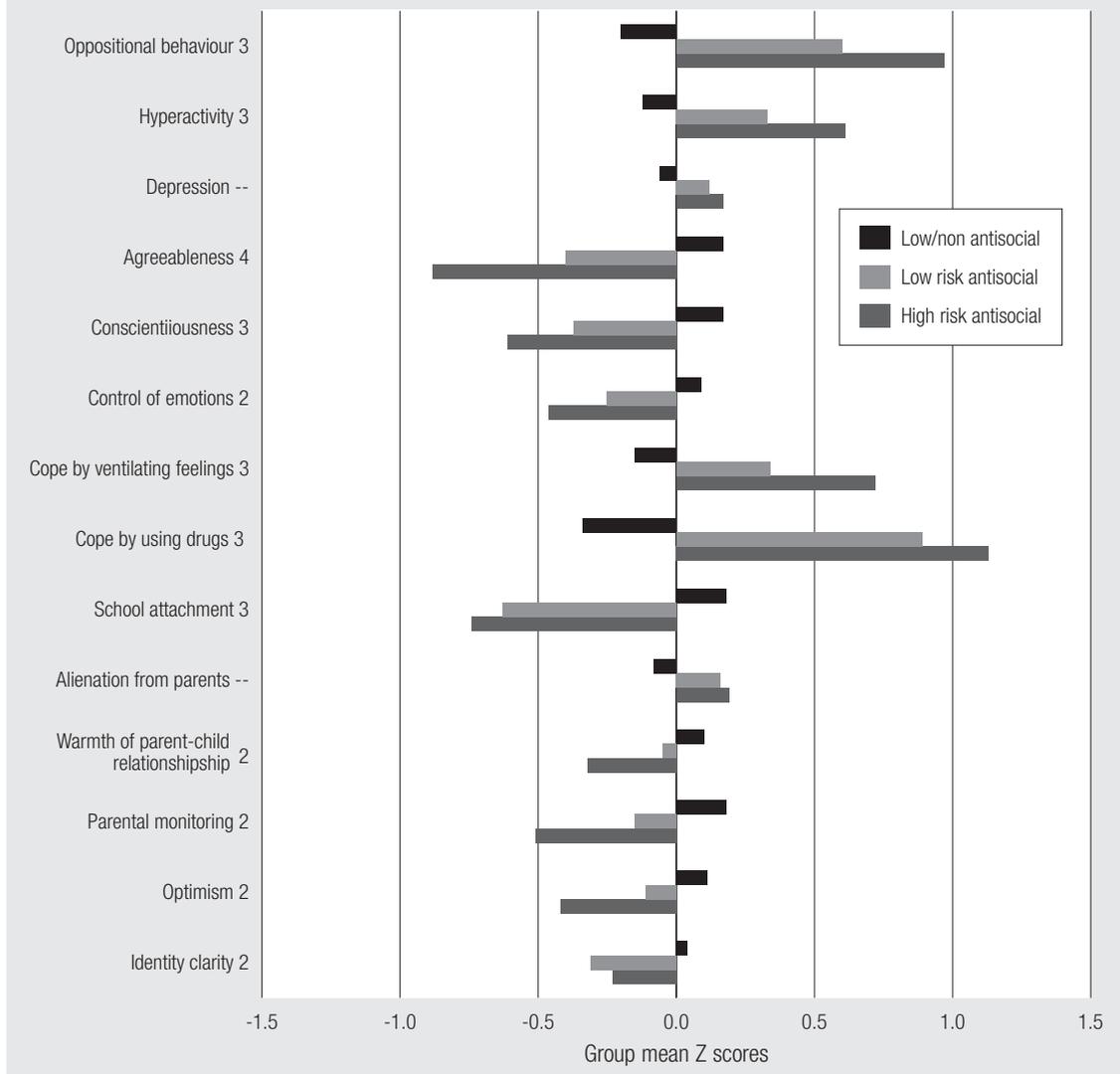
4 = All 3 groups significantly differed

There were no significant differences on:

Parent report of: anxiety-withdrawal, approach-sociability, extraversion, openness to experience, family stress and socio-economic status at 17-18 years.

* The missing group mean is zero, and hence not visible.

Figure 42 Adolescent-reported group differences at 17-18 years of age



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and *Low/non antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group
 4 = All 3 groups significantly differed
 -- = no two groups significantly differ
 There were no significant differences on:

Teenager report of: anxiety-fearfulness, neuroticism, openness to experience, self-esteem, attachment to peers (communication), attachment to peers (trust), attachment to peers (alienation), attachment to mother (trust), coping (support seeking), coping (use humour), coping (via diversion), coping (wishful thinking), coping (independent action), the future (desire for privacy), the future (readiness for intimacy) at 17-18 years.

The focus here is primarily on the *low risk persistently antisocial* group. Analysis of trends from infancy to early adulthood revealed that the first significant differences between this group and the *low/non antisocial* group emerged in early adolescence (12-13 years, Year 7 for most participants). The most extensive differences between these two groups were found at 15-16 years (mid adolescence); however group differences were still evident in early adulthood on almost one-third of the aspects assessed.

The differences between the *low risk persistently antisocial* and *low/non antisocial* groups found in early adolescence were in the areas of antisocial peer affiliations, aggression, social skills (cooperativeness, self control), and school attachment and achievement. In mid to late adolescence, the same differences were evident and broadened to include less parental supervision and monitoring of *low risk persistently antisocial* adolescents' activities and companions, a more "difficult" personality style (less agreeable and conscientious), greater attraction to risk taking, and a greater tendency to cope with stress by using drugs or reacting explosively.

Interestingly, by their own reports, differences between *low risk persistently antisocial* and *low/non antisocial* groups began to emerge from 12-13 years (Year 7 for most). In contrast, the first differences according to parental reports emerged later,

during mid adolescence (15-16 years, Year 10 for most). Thus, it seemed that parents did not detect the first signs of problems, or the onset of a problematic pathway, among the *low risk persistently antisocial* group during the early adolescent years.

As the differences between the *low risk persistently antisocial* and *low/non antisocial* groups increased, the differences between the *low risk antisocial* and *high risk antisocial* groups began to diminish. While the *low risk* group tended to fare slightly better than the *high risk* group, as shown in as Figures 36 to 42, both antisocial groups were equally problematic on oppositionality, school difficulties, and association with antisocial peers in early and mid adolescence; and association with antisocial peers, school difficulties, hyperactivity, depression, assertiveness, the use of drugs to cope with problems, and clarity about the direction they wished their lives to take in mid and late adolescence. However, the *high risk* group consistently displayed a greater number and broader array of difficulties than the *low risk* group.

Did low risk and high risk persistently antisocial adolescents differ in the continuation of antisocial behaviour in early adulthood (19-20 years)?

The next question addressed is whether there were differences between *low risk* and *high risk persistently antisocial* adolescents in the continuation of antisocial behaviour into early adulthood. Moffitt's "life course persistent" and "adolescent limited" typology implies that rates of continuation should be higher among the high risk group, while the low risk group might be expected to show a decline in antisocial behaviour.

The definition of antisocial behaviour at 19-20 years has previously been described (see page 10). In brief, individuals who had engaged in three or more different types of antisocial acts in the previous 12 months were categorised as *highly antisocial*, while those who were involved in fewer than three different types of such acts were categorised as *low/non antisocial*. Overall, approximately 15.5 per cent of the sample reported engaging in high levels of antisocial behaviour at 19-20 years.

A total of 61 per cent of *low risk* and 53 per cent of *high risk* individuals were involved in high levels of antisocial behaviour at 19-20 years. Thus, the frequency of such behaviour was quite similar across the two groups, and there was no trend for *low risk persistently antisocial* individuals to desist from such behaviour more often than their *high risk* counterparts, at this particular age at least.

What were the later life outcomes of individuals who had been low risk and high risk antisocial adolescents?

The final question investigated was the broader psychological and social outcomes in early adulthood of individuals who had been *low risk* and *high risk persistently antisocial* adolescents. As before, these two groups were compared to the *low/non antisocial* adolescent group. Four broad areas were examined, using both self and parent reports obtained at the 19-20 years survey wave.

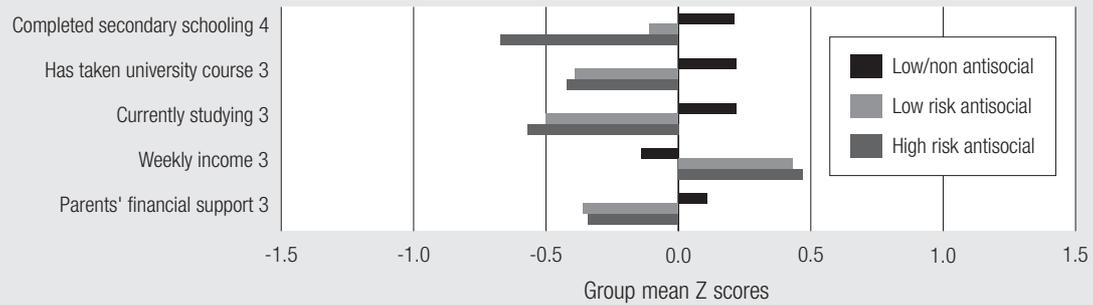
- *current life circumstances* for example, work, study, financial resources and strain, living arrangements as described on page 11;
- *individual attributes* for example, temperament style, social skills, as described on page 11;
- *adjustment* for example, depression, anxiety, stress, substance use, as described on page 11; and
- *interpersonal relationships and community involvement* for example, relationships with parents, friends, civically oriented activities and attitudes, attitudes towards the criminal justice system, as described on page 11-12.

Current life circumstances

There were several significant differences between the groups on current life circumstances, according to the young people themselves⁵⁶ (see Figure 43). Fewer individuals from both adolescent antisocial groups (*low risk* and *high risk*) were undertaking a university course or any type of a higher education course, by comparison with the *low/non antisocial* group. Both antisocial groups enjoyed significantly higher weekly incomes than the *low/non antisocial* group (possibly because more were in full-time employment), but received less financial support from parents. The *high risk* and *low risk* groups were relatively similar on these aspects. However, while fewer individuals from both antisocial groups had completed secondary school than those from the *low/non antisocial* group, rates of secondary school completion were significantly lower among *high risk* than *low risk* individuals. There was a trend for group differences on current life circumstances according to parental report. However this trend did not reach the Bonferroni adjusted significance level of .0018.

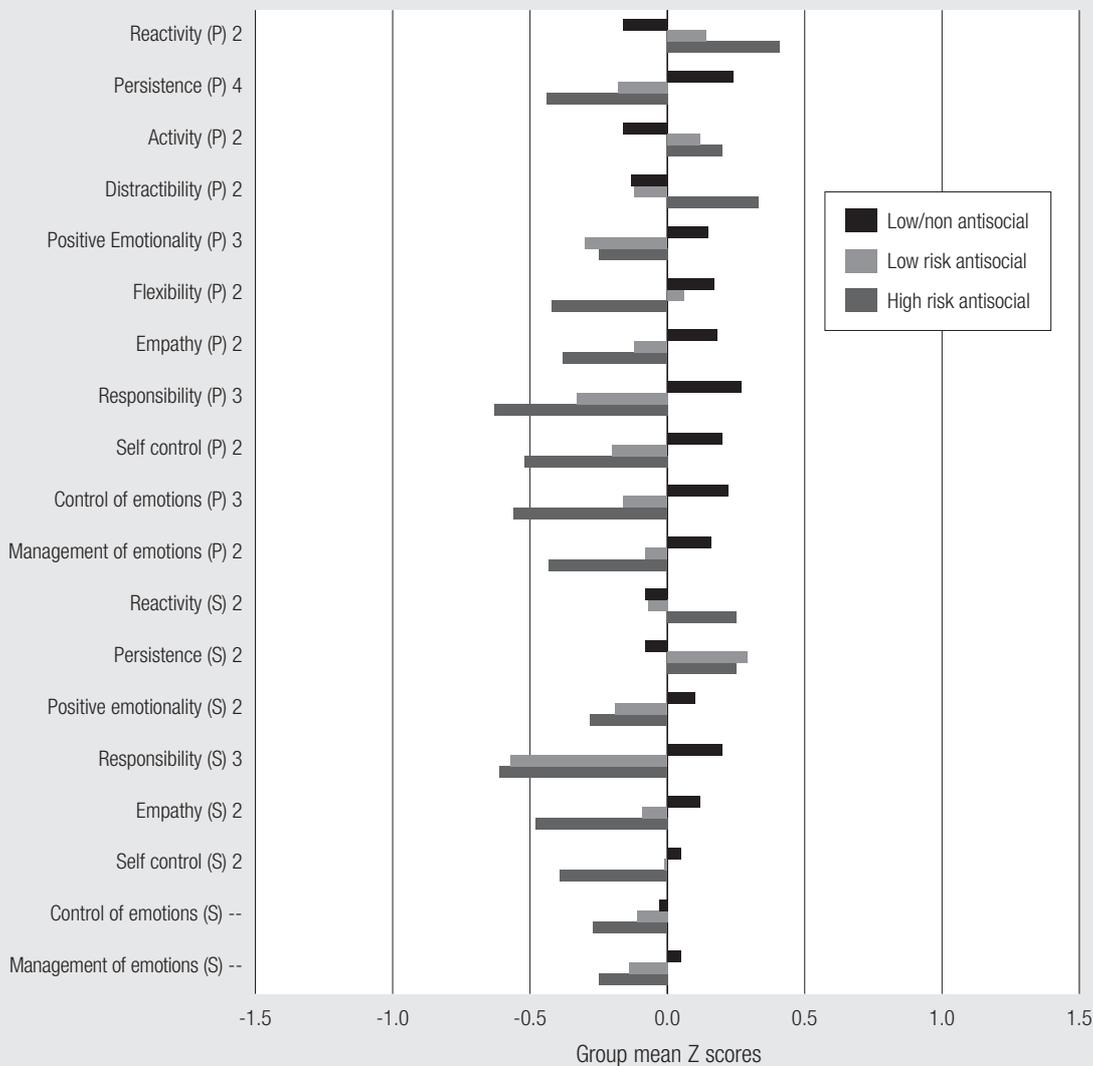
⁵⁶ Young adult report of current life circumstances comparing all 3 groups: multivariate $F(26, 1152) = 3.94$ $p < .001$;
Parent report of current life circumstances comparing all 3 groups: multivariate $F(16, 1140) = 2.05$ $p < .009$

Figure 43 Group differences on current life circumstances



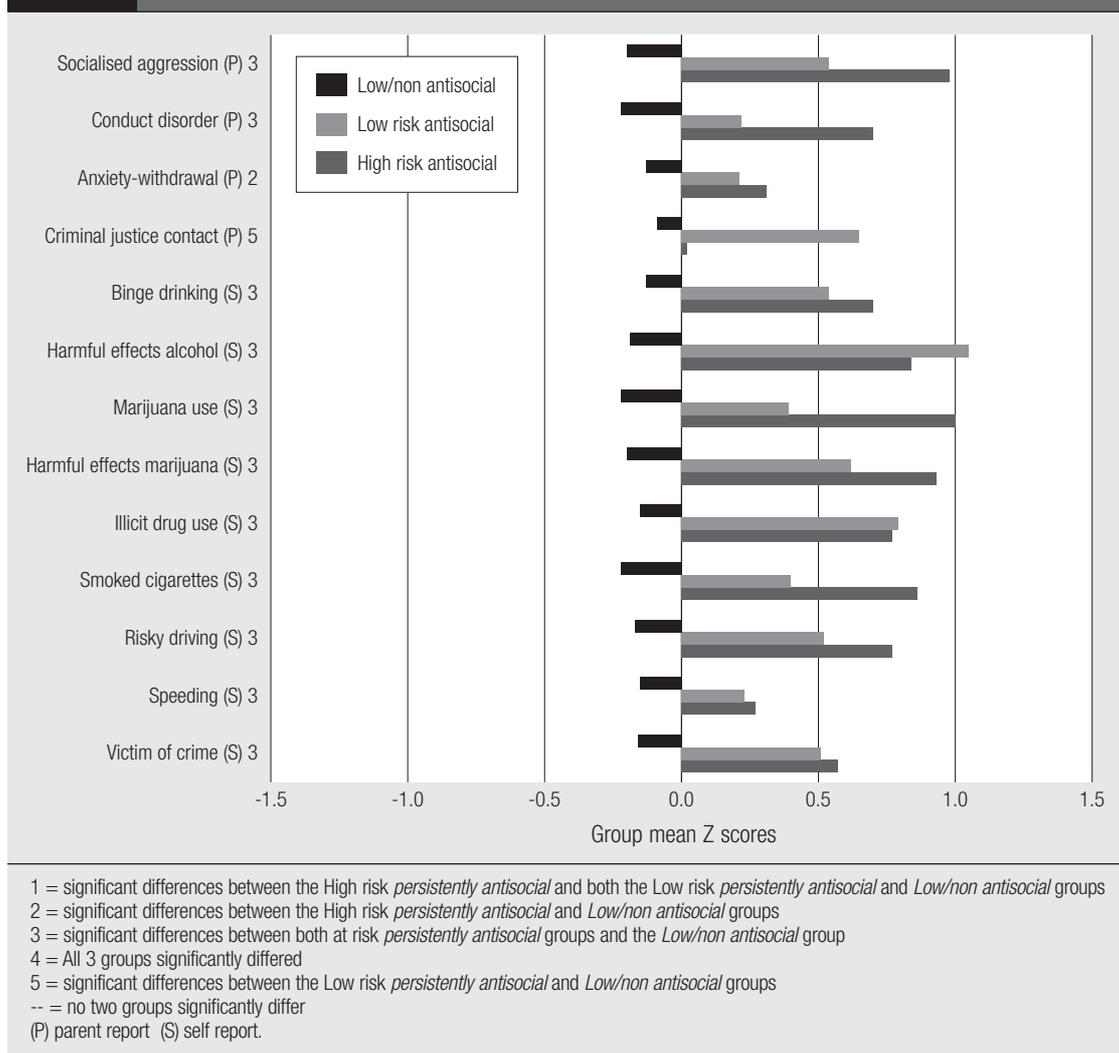
1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and Low/non *antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and Low/non *antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the Low/non *antisocial* group
 4 = All 3 groups significantly differed
 5 = significant differences between the Low risk *persistently antisocial* and Low/non *antisocial* groups
 -- = no two groups significantly differ.

Figure 44 Group differences on individual attributes



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and Low/non *antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and Low/non *antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the Low/non *antisocial* group
 4 = All 3 groups significantly differed
 5 = significant differences between the Low risk *persistently antisocial* and Low/non *antisocial* groups
 -- = no two groups significantly differ
 (P) parent report (S) self report.

Figure 45 Group differences on adjustment



Individual attributes

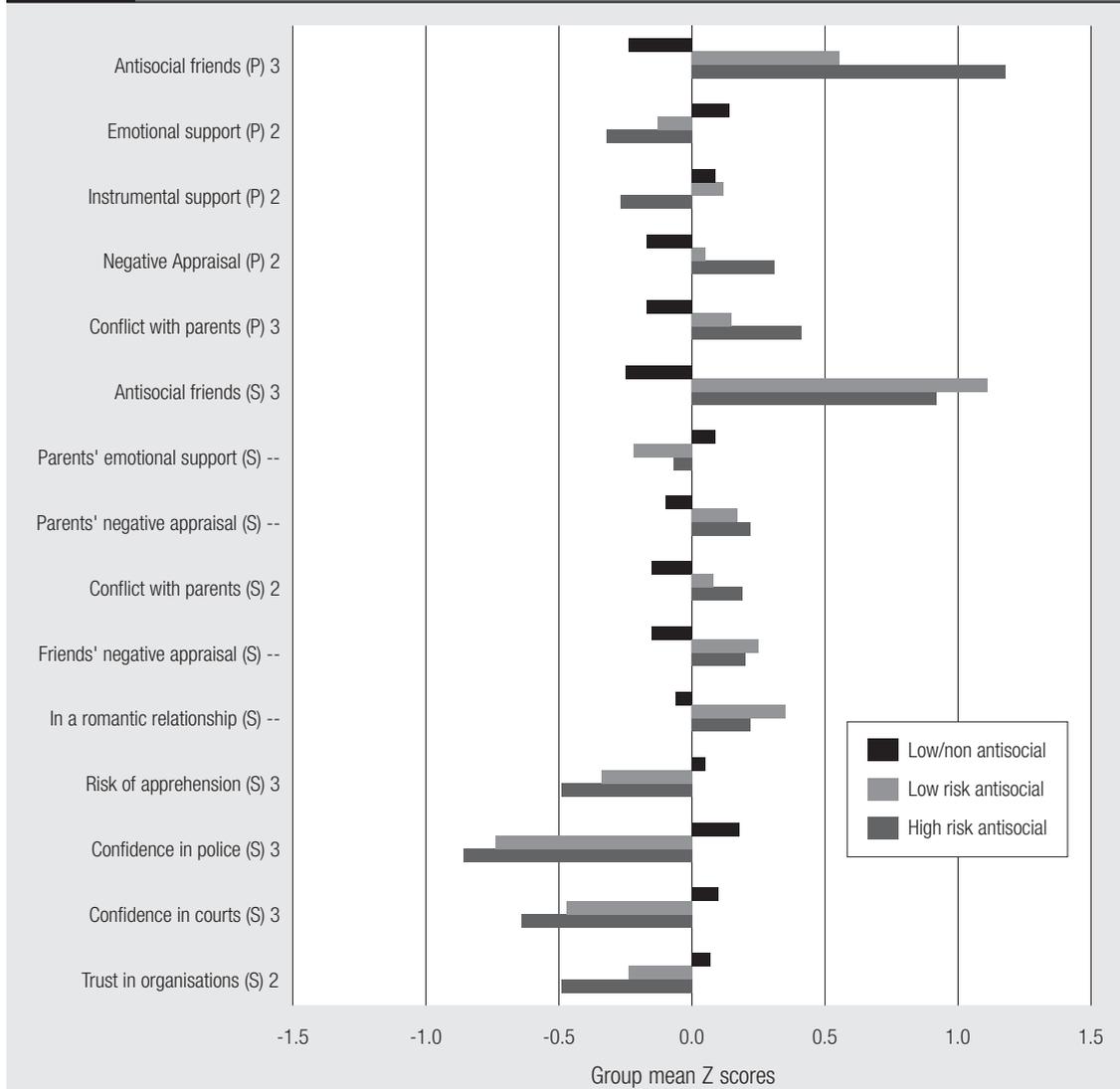
While most significant differences on individual attributes were between the *high risk adolescent antisocial* group and the *low/non adolescent antisocial* group, as reported by both young people and parents⁵⁷ (Figure 44), some differences between the two antisocial groups (*low* and *high risk*) and the *low/non antisocial* group were also found. Thus, the two antisocial groups were significantly less responsible (a facet of social skills), and parent reports suggested that both antisocial groups were less persistent and cheerful in temperament than the *low/non antisocial* group. Consistent with the findings at earlier ages, the *high risk* group also displayed a wider range of difficulties on individual characteristics, such as lower social skills (less empathy - evident since 11-12 years of age, and poorer self control), more reactive, volatile, active and distractible temperament characteristics, and lower capacities to manage their emotions than the *low/non antisocial* group.

Adjustment

On many aspects of adjustment, the two antisocial groups were faring similarly, and significantly less well, than the *low/non adolescent antisocial* group⁵⁸ (Figure 45). Thus, *low risk* and *high risk antisocial* individuals reported greater use of all types of substances except alcohol (cigarettes, marijuana, illicit drugs), and more harms associated with substance use than *low/non antisocial* individuals. They more frequently engaged in risky driving and speeding, and had more often been a victim of crime, according to their own self reports. Parents reported higher levels of aggression and antisocial behaviour among both at risk groups, and more contact with police for offending among *low risk* individuals. There were no differences between the two antisocial groups and the *low/non adolescent antisocial* group on depression, anxiety or stress according to the young people

57 Young adult report of individual attributes comparing all 3 groups: multivariate $F(28, 1150) = 3.13$ $p < .001$;
 Parent report of individual attributes comparing all 3 groups: multivariate $F(26, 1182) = 4.01$ $p < .001$
 58 Young adult report of adjustment comparing all 3 groups: multivariate $F(20, 1194) = 9.00$ $p < .001$;
 Parent report of adjustment comparing all 3 groups: multivariate $F(12, 1180) = 13.81$ $p < .001$

Figure 46 Group differences on interpersonal relationships and community involvement



1 = significant differences between the High risk *persistently antisocial* and both the Low risk *persistently antisocial* and *Low/non antisocial* groups
 2 = significant differences between the High risk *persistently antisocial* and *Low/non antisocial* groups
 3 = significant differences between both at risk *persistently antisocial* groups and the *Low/non antisocial* group
 4 = All 3 groups significantly differed
 5 = significant differences between the Low risk *persistently antisocial* and *Low/non antisocial* groups
 -- = no two groups significantly differ
 (P) parent report (S) self report.

themselves, although *low risk* individuals tended to be significantly more anxious/withdrawn than *high risk* and *low/non adolescent antisocial* individuals according to parent reports.

Interpersonal relationships and community involvement

Most significant differences on interpersonal relationships were between the *high risk antisocial* group and the *low/non antisocial* group (Figure 46). Nevertheless, individuals from both antisocial groups were more often involved in friendships with other antisocial youth, according to both parent and self reports. The two antisocial groups also tended to hold similarly more negative attitudes towards social institutions (less confidence in the police and courts, less trust in organisations), and believed there was a lower chance of apprehension if an offence was committed. The *high risk antisocial* group also received less emotional and instrumental support from parents, and parents tended to respond more negatively to them (for example, were more critical, less appreciative of their efforts), according to parent reports. *High risk* young adults and their parents both reported significantly more conflict in their relationship than did parents and young people from the *low/non antisocial* group⁵⁹.

59 Young adult report of interpersonal relationships and community involvement comparing all 3 groups: multivariate $F(38, 1142) = 5.58$ $p < .001$;
 Parent report of interpersonal relationships and community involvement comparing all 3 groups: multivariate $F(14, 1116) = 11.19$ $p < .001$

In summary, just over half the individuals from the *low risk* and *high risk persistent adolescent antisocial* groups continued to engage in antisocial behaviour in early adulthood. Rates of such behaviour were quite similar across the two groups, and there was no trend for *low risk persistently antisocial* individuals to desist from such behaviour more frequently than their *high risk* counterparts at this particular age.

Most significant differences in early adulthood were between the *high risk adolescent antisocial* group and the *low/non antisocial* group. These differences were found over all domains and on a wide range of aspects of functioning. However there were also a number of aspects on which both *high risk* and *low risk antisocial* groups were faring less well than the *low/non antisocial* group. These were primarily on facets of adjustment and life circumstances but some differences on the other two domains (individual attributes, interpersonal relationships and community involvement) were also found.

Fewer of the *low risk antisocial* group had completed secondary school or undertaken a further education course than the *low/non antisocial* group. The *low risk* group more frequently used all types of substances except alcohol (for example, cigarettes, marijuana, illicit drugs), and reported more harms associated with such use. They more often engaged in risky driving and speeding, and had more frequently been a victim of crime. Parents reported them to be more aggressive and involved in antisocial behaviour. They tended to be less responsible, and were more often involved in friendships with other antisocial youth. Their attitudes towards the criminal justice system and other social organisations (for example, governments, business corporations, trade unions) tended to be less positive, and they believed there was less risk of apprehension for a criminal offence.

The *high risk adolescent antisocial* group was also more problematic than the *low/non antisocial* group on these aspects, and on several others as well. Thus, *high risk persistently antisocial* individuals tended to be less socially skilled (less empathic, poorer self control) and typically more “difficult” in temperament style (more volatile and reactive, more active and distractible). Their relationships with parents tended to be less positive, with greater conflict, less support and more negativity in the relationship, according to both parents and young people.

As found earlier during adolescence, the *low risk antisocial* group closely resembled the *high risk antisocial* group on a number of characteristics, and both groups were significantly more problematic than the *low/non antisocial* group on these aspects. Thus, compared to the *low/non antisocial* group, both antisocial groups had less often undertaken university study since leaving secondary school; were less often currently undertaking any type of study; received less financial support from parents; displayed a less persistent temperament style; tended to be less responsible; were more often engaged in binge drinking, harmful alcohol use and illicit drug use; had more often been a victim of crime; expressed less confidence in the police and courts; and had friends who engaged in antisocial behaviours. However, as also found during adolescence, the *high risk* group also appeared to experience a wider range and more severe difficulties than the *low risk antisocial* group.

Discussion and implications

This section has focused on the small group of children (N=42) who appeared to be low risk during childhood, but who nevertheless engaged in persistent antisocial behaviour during adolescence. Their across-time pathways, and the factors which may have contributed to a change in pathways, were investigated. As well, this group was followed forwards into early adulthood to assess whether antisocial behaviour persisted or ceased, and the degree to which *low risk persistently antisocial* individuals differed on aspects of adjustment and wellbeing from a *low/non antisocial group* who had not engaged in antisocial behaviour during adolescence. The *low risk* group was also compared to a *high risk persistently antisocial* group to determine whether a specific set of risk factors was associated with the development of antisocial behaviour among *low risk* individuals.

The *low risk persistently antisocial* group's development from infancy up to late childhood was examined. In general, the *low risk* group appeared to be progressing similarly to the *low/non antisocial* group over this age span, with no significant differences found at any time point or on any measure. The first differences emerged during early adolescence, at 12-13 years of age, or Year 7 for the great majority of the ATP cohort. Differences became more widespread during adolescence and peaked at 15-16 years of age, although numerous differences were still evident at the latest survey wave at 19-20 years.

Characteristics on which the *low risk persistently antisocial* group was found to be significantly more problematic than the *low/non antisocial* group during adolescence included: aggression, personality style (agreeableness and conscientiousness), social skills (cooperativeness, self control), attraction to risk taking, tendency to cope with stress by using drugs or reacting explosively, school attachment and achievement; antisocial peer affiliations, and parents' supervision and monitoring of their adolescents' activities and friendships. These characteristics also differentiated between the *high risk antisocial* and *low/non antisocial* groups. However, overall, the *low risk* group was generally less problematic and experienced a narrower range of difficulties by comparison with the *high risk antisocial* group. Thus it seemed that lower levels of risk were accompanied by less extensive dysfunction among *low risk* individuals.

Despite this, following the *low risk* group forward into early adulthood (19-20 years), approximately 60 per cent continued to engage in antisocial behaviour at 19-20 years, at a rate similar to that found for *high risk persistently antisocial* individuals. During early adulthood, *low risk antisocial* individuals were found to be more problematic than *low/non antisocial* individuals on: aggression,

social skills (responsibility), substance use, risky driving, experience of victimisation, completion of secondary schooling, engagement in further education, friendships with other antisocial youth, attitudes towards the criminal justice system and towards other social organisations, and perceptions of the risk of apprehension for a criminal offence. Again, the *low risk* group tended to be faring better than the *high risk* group, with a few notable exceptions (such as alcohol use and abuse, illicit drug use, antisocial peer affiliations, and attitudes towards criminal justice agencies). Thus, at 19-20 years, there appeared to be fewer adverse correlates associated with the *low risk* pattern of adolescent antisocial behaviour, by comparison with the *high risk* pattern of adolescent antisocial behaviour.

While the *high risk persistently antisocial* group was not the major focus of this section, of note was the extensiveness and longevity of this group's difficulties. The *high risk persistently antisocial* group was found to be significantly more problematic than the *low/non antisocial* group on aspects from every domain of functioning measured. Furthermore, numerous significant differences between these two groups were evident from the early primary school years onwards. The *high risk* subgroup included two-thirds of the individuals in the broader persistent adolescent antisocial group. Hence, the early-childhood onset pathway appeared to be the most common route to persistent adolescent antisocial behaviour identified by the current study.

Some conclusions and implications are now presented.

The role of social and broader factors in the development of persistent adolescent antisocial behaviour among low risk children

Following Moffitt's (1993) theory, it was anticipated that social factors, such as antisocial peer friendships and close peer bonds, would be particularly characteristic of the *low risk persistently antisocial* group. Aspects such as temperament style, behaviour problems, and family environment factors, were expected to be less relevant for the development of antisocial behaviour among this group of children. However, only some of the hypothesised social factors were found to be influential (for example, antisocial peer friendships) while others were not (such as close peer bonds). As well, a number of additional factors also emerged as important.

The factors that most powerfully differentiated the *low risk persistently antisocial* and the *low/non antisocial* groups in early adolescence were higher rates of friendships with other antisocial youth, and school adjustment/achievement problems. As this was the time at which the *low risk* group's pathway appeared to change, these factors may have been particularly important contributors to shifts in developmental pathways, with implications for intervention and prevention approaches aimed at this age.

Thus, these findings underscore the importance of reducing young people's involvement in antisocial peer friendships. These findings add to those of the Second Report from this collaborative project (Smart et al. 2003), which suggested that the lack of such affiliations may have been protective against the development of antisocial behaviour among at risk but resilient adolescents. Patterson and colleagues (2005) have also recently found that aggressive children who had not formed friendships with antisocial peers did not progress to adolescent antisocial behaviour. Here, it seemed that the development of friendships with antisocial peers provided an impetus for the development of antisocial behaviour among young people who had previously been developing well, attesting to the powerful influence of such friendships.

A second implication of these findings is the importance of fostering adolescents' adjustment and sense of attachment to school. These attributes were consistently much lower across adolescence among *low risk persistently antisocial* than *low/non antisocial* individuals, and appeared to be another influential factor associated with the changing pathway of this group. In the same vein, as demonstrated in the Second Report, at risk resilient young people reported greater attachment to school than at risk persistently antisocial adolescents, emphasising the influential role that schools can play in fostering young people's psychosocial development. As suggested in the Second Report, these findings further indicate the value of interventions aimed at improving young people's attachment to school (both how they adjust to the routines and demands of school life, and the ability of schools to engage and nurture these students).

However, other social factors hypothesised to be important were not found to be so. Thus, while the quality of peer relationships was repeatedly measured across adolescence, contrary to expectations, only at one time point (15-16 years) did the *low risk* group display closer peer ties than the *low/non antisocial* group and only by parent, but not adolescent, report. The *low risk* group was also reported by parents to be less assertive at this time (and therefore perhaps more impressionable and able to be influenced by peers). On the whole, then, it did not seem that the *low risk* group had closer ties and was more attached to their peers than other adolescents.

The *low risk* group more frequently displayed noncompliant and acting out behaviour than the *low/non antisocial* group from early adolescence, such as higher aggression, lower cooperativeness and self control. Other aspects that differentiated the *low risk persistently antisocial* group from the *low/non antisocial* group were personal qualities such as lower agreeableness and conscientiousness, higher attraction to risk taking, and less adaptive methods of coping with stress, such as substance use and reacting explosively. Interestingly, such characteristics were not evident during childhood, but began to emerge at the same time that *low risk* adolescents began to be involved in antisocial behaviour. (Again, these findings are in line with the findings of the Second Report, which showed an improvement in such characteristics among at risk adolescents who were resilient to the development of antisocial behaviour). Differences between the *low risk persistently antisocial* and *low/non antisocial* groups were also evident on some aspects of family life, such as parents' tendency to supervise and monitor their adolescent's activities and friendships less closely, and a more troubled parent-adolescent relationship. Hence, contrary to expectations, a number of personal and family factors accompanied the development of antisocial behaviour among *low risk* adolescents. However, the *low risk* group

was often less problematic than the *high risk* group on these factors, perhaps suggesting that these characteristics may have been less salient influences on the development of antisocial behaviour among *low risk* individuals.

The risk factors identified for the *low risk persistent antisocial* group were a narrower subset of the factors found to characterise the *high risk persistently antisocial* group. Thus, the risk factors identified were common to both antisocial groups and there did not seem to be specific factors that were uniquely associated with the development of antisocial behaviour among *low risk* individuals.

Many low risk individuals maintained their involvement in antisocial behaviour during early adulthood

The second issue addressed was the continuation of antisocial behaviour into early adulthood among *low risk persistently antisocial* adolescents. It had been anticipated that these individuals would more frequently desist from antisocial behaviour in adulthood than their *high risk* counterparts (Moffitt 1993). However, rates of antisocial behaviour were quite similar across the two groups at 19-20 years. The current findings are in accord with the findings of several other studies (for example, Aguilar 2001; Nagin et al. 1995), suggesting that antisocial behaviour may not be a passing phase for many of these young people. It will be important to continue following the *low risk* group into their twenties as patterns of desistance may take longer to emerge than the time span of two years employed here, or may be associated with a broadening of problem behaviour.

Although exploratory and preliminary, these findings suggest that while the antisocial pathway which commenced in early adolescence may be less common than the pathway which commenced in childhood, the long-term outcomes for individuals traversing these separate pathways may be relatively similar. They further demonstrate that there can be change in developmental pathways, and that a range of interventions targeting different developmental stages may be needed if persistent antisocial behaviour is to be prevented.

The low risk persistently antisocial group continued to be more problematic than the low/non antisocial group in early adulthood

The third issue addressed was the psychosocial adjustment and wellbeing of *low risk antisocial* individuals in early adulthood, by comparison with *low/non antisocial* and *high risk persistently antisocial* individuals.

Low risk antisocial individuals continued to be more problematic than *low/non antisocial* individuals, with differences particularly apparent on aspects of adjustment and current life circumstances. These individuals more frequently engaged in a range of problematic and risky behaviours such as marijuana and illicit substance use, risky driving, and speeding. Importantly they continued to associate with antisocial friends, which may have influenced their continued engagement in antisocial behaviour. They were less likely to have completed secondary school, and to have undertaken further education. As a result, it is possible that their later life opportunities may be more limited, by comparison with *low/non antisocial* young adults. These findings are consistent with other studies in demonstrating the adverse long-term consequences of persistent adolescent antisocial behaviour, regardless of whether it is preceded by a history of childhood difficulties (for example, White et al. 2001). Thus it adds to the evidence base concerning the long-term outcomes of both “life course persistent” and “adolescent limited” antisocial adolescents.

It was noteworthy that *high risk* antisocial individuals tended to be faring worse in early adulthood than low risk antisocial individuals, and across a wider range of domains. For example, *high risk* individuals more often displayed personal traits such as lower social skills and a more “difficult” temperament style, and tended to have poorer, more conflictual relationships with parents. These additional difficulties may presage a more troubled future for these *high risk* antisocial individuals who have been experiencing difficulties for most of their lives, by comparison with *low risk* individuals, whose difficulties only started in adolescence, as was found by Moffitt et al. (2002) and Farrington (1995). As noted earlier, it will be important to continue following the progress of the *low risk* and *high risk persistently antisocial* groups in future years to ascertain the longer-term outcomes for these two sub-groups.

What does it mean to be “at risk”, and what are the implications for universal and targeted interventions?

Taken together, the findings from the Three Reports from this collaborative project between the Australian Institute of Family Studies and Crime Prevention Victoria provide valuable insights into the notion of “risk” for the development of persistent adolescent antisocial behaviour. Firstly, a number of risk and protective factors behaviour were identified, which were evident from early childhood onwards (Vassallo et al. 2002). Secondly, a substantial group of children who were “high risk” but who were resilient to the development of antisocial behaviour, was found (Smart et al. 2003). Thirdly, the study revealed the existence of a small group of children who did not possess many risk factors for antisocial behaviour during late childhood, but who nevertheless become persistently involved in such behaviour in adolescence.

These findings are a reminder that to be “high risk” does not inevitably result in an adverse outcome, and conversely, that to be “low risk” is not a guarantee of a positive one. By definition, risk status simply increases or reduces the likelihood of an adverse outcome. Yet intervention strategies are often targeted at “high risk” individuals. Clearly, these approaches may have many “misses” (false positives and false negatives) as well as “hits”. A number of those who receive interventions may not require them, and intervention attempts may not reach others who would potentially benefit from them. Furthermore, labelling children as “at risk” may create expectations of an adverse outcome among parents, teachers and the children themselves, and become a self fulfilling prophecy, further contributing to this outcome.

The evidence from the current collaboration has clearly shown that the environmental contexts in which children's development takes place can act as a buffer or a spur to the development of antisocial behaviour. These contexts include the family, peer and school environments. Intervention efforts could usefully be directed at these "at risk" contexts, aiming to reach a range of individuals in a non-stigmatising way. These environments may also be more amenable to change than some of the more entrenched intrinsic characteristics (such as behaviour problems, temperament style) found to be risk factors for antisocial behaviour. Thus, the findings from this project could be seen as providing support for intervention efforts that are targeted at risky contexts, rather than at at-risk individuals. However, more targeted, follow-up approaches for children exhibiting clear signs of problems will always be necessary. A mix of community-based and more individualised approaches may be the most beneficial and cost-effective.

The diversity of pathways to antisocial behaviour revealed by the current study, with pathways commencing in early childhood, early adolescence, and early adulthood, also carries implications for the timing of intervention attempts. The findings provide support for Loeber and Farrington's (1998) assertion that it is "never too early, never too late" to intervene in attempts to prevent or mitigate antisocial behaviour. The findings also serve as a reminder of the danger of concentrating too narrowly on a particular stage of development, given the considerable capacity for change revealed as children moved through the various developmental stages.

Strengths and limitations

This study had a number of strengths. Most notably, it was able to draw upon a large pool of data collected over a 20-year period on many aspects of young peoples' lives. It involved a sample of young people and families drawn from the general population, who lived in diverse circumstances (for example urban and rural localities, advantaged and disadvantaged backgrounds). A further strength was the use of multiple time-points and informants to gain a comprehensive and reliable picture of young people's development and wellbeing.

However, there were also several limitations which should be acknowledged. Firstly, the *low risk* group was a small one (N=42), and hence the findings should be viewed as exploratory, and in need of follow-up. The small group size may have limited the study's power to detect group differences that may have emerged if a larger sample had been available. Secondly, a large number of analyses were undertaken, which may have resulted in some chance associations being recorded. However, we attempted to minimise this possibility by using a more stringent significance level (Bonferroni adjustment).

Thirdly, the three groups differed in gender composition. Just over half the *low risk persistently antisocial* group were male, compared with three quarters of the *high risk persistently antisocial* group and one third of the *low/non antisocial* group. Given the greater rate of problems amongst boys on some of the characteristics included (such as externalising behaviour problems, school difficulties) it is probable that gender contributed to the group differences found. However, as discussed in the First Report from this collaborative project, analyses in which gender is controlled have the effect of cancelling out the contribution of this very real difference between the groups, and may have resulted in findings of limited relevance to real world settings (Tabachnick and Fidell 1996), where males are in fact more likely to engage in antisocial behaviour. Hence, gender was not controlled in the analyses undertaken, but its potential contribution to the findings is noted⁶⁰.

In conclusion, the development of adolescent antisocial behaviour among *low risk* children was investigated, as well as their continuing involvement in antisocial behaviour in early adulthood and their long-term adjustment and wellbeing. *Low risk persistently antisocial* adolescents had, as children, been indistinguishable from the group who never engaged in high levels of antisocial behaviour during adolescence.

However during early adolescence, or the early secondary school years, the *low risk* group was notably more involved with antisocial peers and less attached to school. They also began to display more difficult traits and behaviour as well as lower social skills. By mid adolescence there were more extensive differences between the two groups. As the *low risk* group became differentiated from the *low/non antisocial* group, it became increasingly similar to the *high risk antisocial* group. However, generally the *high risk antisocial* group displayed more severe and a broader range of difficulties than the *low risk antisocial* group, and thus appeared to be faring worse at this age.

The majority of individuals from both antisocial groups (*low risk* and *high risk*) continued to engage in high levels of antisocial behaviour in early adulthood (19-20 years). The differences between the *low risk* and *low/non antisocial* groups found in adolescence were again evident in early adulthood. Thus, the *low risk antisocial* group more frequently engaged in problematic and risk-taking behaviours such as substance use, risky driving and speeding. Fewer had completed secondary school or undertaken further education. They were more often involved in antisocial peer friendships. The *low risk antisocial* group continued to be very similar to the *high risk antisocial* group on these characteristics, but otherwise displayed a more limited, and generally less severe, range of difficulties in early adulthood.

⁶⁰ For those who are interested, a second set of analyses was conducted in which gender was controlled. These analyses are shown in Appendix 8 and revealed slightly fewer differences in childhood than reported here, but generally a very similar pattern of differences between the groups overall.

6



**Motivations to comply with the law, attitudes,
and antisocial behaviour**

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Motivations to comply with the law, attitudes, and antisocial behaviour

Adolescent antisocial behaviour as it is commonly defined includes a broad array of behaviours ranging from minor to serious criminal acts (such as vandalism, assault or drug trafficking) as well as socially inappropriate behaviours which are not illegal (for example, bullying and fighting)⁶¹ (Elliott and Ageton 1980; Mak 1993). Furthermore, as shown earlier, such behaviour often persists into adulthood at considerable cost to individuals, families, communities and governments. Understanding individuals' attitudes towards the legal system and increasing motivations to comply with the law may facilitate the development of effective crime prevention strategies aimed at reducing antisocial behaviour and promoting adherence to the law.

There are a number of theories concerning why individuals are motivated to comply with the law. One theory argues that individuals are deterred from offending because they believe there is a risk of apprehension and punishment should they engage in such activities (Nagin 1998). Another view is that a sense of community attachment or social obligation is important in motivations to obey the law (Tyler 1990). Attitudes toward particular criminal justice agencies such as the police and courts are also believed to affect compliance with the law (Tyler and Huo 2002). This next section will examine the relationships between differing motivations to comply with the law, attitudes held towards the police and courts, and antisocial behaviour.

A review of research is provided concerning theories of motivation to comply with the law, followed by an overview of how attitudes toward criminal justice agencies may be related to compliance. Also reviewed are findings concerning differences between antisocial and non-antisocial young adults in their motivations to comply with the law and attitudes toward police and the courts.

Motivations to comply with the law

The instrumental viewpoint

Instrumental theories of motivations to comply with the law are based on the assumption that individuals are primarily self-interested and obey the law to avoid apprehension and punishment (Fox, Humphreys, Thomas, Bourke and Dussuyer 2003). Instrumental theories underlie most legal policies and strategies designed to prevent crime and antisocial behaviour and achieve compliance with the law (Fox et al. 2003). For example, visible police activities, such as patrolling the streets and other public spaces, aim to create the perception that there is a high risk that police will detect illegal activities. In Australia, the use by police of highly visible random breath testing activities and speed cameras has been a key element in strategies aimed at reducing drink driving and other road traffic offending (see Homel 1990, 1993). The primary purpose of these activities is to increase individuals' perceptions of the risk of apprehension and punishment should they engage in such activities.

These approaches emphasise the impact that perceptions and attitudes can exert on behaviour. However, evidence suggests that experiences and behaviours can influence attitudes too. For instance, studies examining the relationship between antisocial behaviour and perceptions of the risk of apprehension have consistently found that antisocial individuals perceive the chance of apprehension to be lower than non-antisocial individuals (Fox et al. 2003; Moffit, Caspi, Rutter and Silva 2001; Nagin 1998; Paternoster and Piquero 1995). Several argue that an individual's perceptions of risk are related to their actual experiences of apprehension (Nagin 1998; Paternoster and Piquero 1995). That is, when engagement in antisocial behaviour does not result in apprehension and/or punishment, perceptions of the risk of apprehension are lowered. It is also believed that earlier informal sanctions and monitoring by parents and teachers are important influences on individuals' later perceptions of the risk of detection and punishment (Paternoster and Piquero 1995).

Overall, perceptions of the risk of apprehension appear to be related to propensity to engage in antisocial behaviour, although the connections between them remain unclear and may be bi-directional.

The role of community attachment and civic mindedness

While the efforts of the police and the courts to influence perceptions of the risk of apprehension are important in reducing offending, other factors may also be influential in promoting compliance with the law. Some suggest that individuals obey the law not merely because they are concerned with the threat of apprehension or punishment, but because they have a sense of social obligation or a moral commitment that the law ought to be obeyed (Fox et al. 2003). According to this view, an important factor in compliance with the law is the degree to which an individual feels bonded to, and identifies with, the larger group or society (Sherman 1993).

61 Facets of Conduct Disorder according to diagnostic systems such as the Diagnostic and Statistical Manual of Mental Disorders (DSM), Version IV, American Psychiatric Association, 1994.

One relevant aspect here is civic mindedness. Civic mindedness refers to behaviours and attitudes that are beneficial to society and is thought to reflect concern for the welfare of, and trust in, others in one's community (Da Silva, Sanson, Smart and Toumbourou 2004). Aspects of civic mindedness include community-oriented behaviours and attitudes that aim to benefit others, such as volunteer work and supporting charities. Civic mindedness also includes attitudes or behaviours that involve participation in the political arena such as voting and keeping informed about political issues.

It is commonly believed that such civic-minded attitudes and activities are important in the effective functioning of society (Flanagon and Sherrod 1998). Civic-mindedness might also be expected to be associated with lower involvement in crime and antisocial behaviour (Moore and Allen 1996; Uggen and Janikula 1999). For example, the social development model (Catalano and Hawkins 1996) contends that individuals who are bonded to peers, their family, and community organisations that engage in prosocial activities are themselves more likely to engage in prosocial behaviour. On the other hand, those who are poorly attached to families, schools and community, but are more strongly attached to antisocial peers, are more likely to engage in antisocial behaviour.

Participation in civically-oriented activities may also protect against engagement in antisocial behaviour. For instance, it has reported that adolescents at risk for problem behaviours who participated in volunteer work had fewer negative behavioural and academic outcomes such as teenage pregnancy, school drop out and suspension, as well as lower antisocial and criminal behaviour (Moore and Allen 1996; Uggen and Janikula 1999). It is thought that the effects of activities such as volunteer work may promote self-esteem and empathy, and foster the development of skills that are valuable for employment and education, as well as facilitating friendships with prosocial peers and adults and strengthening community bonds (Moore and Allen 1996).

Attitudes toward criminal justice agencies and motivations to comply with the law

In recent years a number of studies have examined attitudes towards criminal justice agencies. Generally such studies have attempted to measure individuals' trust or confidence in the ability of the principal agencies of the criminal justice system, the police and courts, to adequately carry out their roles in dealing with crime (Tyler 1990). Individuals thus may be asked to indicate their degree of confidence in the ability of the police or the courts to prevent or solve crime, or to treat people fairly, act honestly, and exercise their authority within legal boundaries.

Attitudes towards criminal justice agencies are important for a number of reasons. Firstly, the activities of criminal justice agencies are greatly assisted by the involvement of the community. Positive attitudes towards criminal justice agencies have been found to be important in facilitating community cooperation in these activities (for example, willingness to testify in court, report crime, join neighbourhood groups to prevent crime) (Tyler 1990).

Secondly, influential research conducted by Tyler and colleagues (Tyler 1990; Tyler and Huo 2002) suggests that attitudes toward criminal justice institutions also influence individuals' compliance with the law. Specifically, Tyler found that individuals' willingness to abide by and defer to the decisions of criminal justice agencies (such as court decisions, issuing of fines, the directions of police officers) are influenced by their attitudes toward such agencies. Furthermore, Tyler's research also indicated that attitudes toward criminal justice agencies were related to individuals' trust in others and their overall sense of attachment to the society that these bodies represent. Thus, this research suggests that positive perceptions of the police and courts may be important in promoting trust and identification with the community, which in turn increases individuals' sense of obligation to abide by the law.

Research that has examined young adults' contact with and attitudes toward criminal justice agencies is next briefly reviewed.

Young adults' contact with and attitudes toward criminal justice agencies

As both offenders and victims of crime, young people's contact with the criminal justice system is much higher than that of older age groups (Adler, O'Connor, Warner and White 1992; Dobash, Dobash, Ballintyne and Schumann 1990). For instance, in a survey of Australian adolescents, 80 per cent of 16-17 year olds reported that they had been stopped and spoken to by the police, while 50 per cent had been taken to a police station (Adler et al. 1992). Additionally, one-third had contacted police to report a crime or a victimisation incident. Almost as many had asked police for assistance at some time. While young people's contact with the court system is not as frequent as their contact with police, court appearances for offending are also disproportionately high among youth compared with older age groups, particularly for theft-related offences (Children's Court of Victoria 2003).

There is mixed evidence concerning the nature of attitudes toward criminal justice agencies among Australian youth, particularly attitudes toward the police (James 1994). Adler et al. (1992) reported that young people were less likely than the general population to indicate great respect for police and to believe that the police were as honest as most people. However, other studies that have examined Australian youth attitudes towards the police, in addition to attitudes to other authority bodies (e.g., parents and teachers), have found that young people's attitudes towards police are generally no more negative than attitudes

toward other authority figures (Levy 2001; Rigby, Schofield and Slee 1987). Furthermore, these studies found that a majority of young people agreed with statements such as “The police are pretty trustworthy” and “The police are generally quite impartial and fair” (Rigby et al. 1987).

One consistent finding is that young people who are antisocial, as well as those who have had contact with the criminal justice system, generally hold less positive attitudes toward police. For instance, Adler et al. (1992) found that young people who experienced police-initiated contacts (had been stopped and spoken to) held less positive attitudes than those who had not. In addition, compared to the general population, young people who sought police assistance (for example, following victimisation) were less likely to be satisfied with the help received from the police.

Fewer studies have examined the attitudes of Australian youth towards the court system. However, international literature, in particular that from the United States, suggests that while increasing age is associated with a rise in positive attitudes towards the police, age is less strongly related to attitudes towards the courts (Roberts and Stalans 1998). This literature also indicates that in recent years there has been increasing dissatisfaction among the general population with certain court functions, particularly in relation to issues of leniency in sentencing and sentencing that reflects public opinion (Roberts and Stalans 1998).

This section reports an investigation of connections between motivations to comply with the law, attitudes toward police and courts, and engagement in antisocial behaviour. The following issues are investigated:

- a) Relationships between the perceived risk of apprehension, civic mindedness, and antisocial behaviour among young Australian adults aged 19-20 years;
- b) Differences between *highly antisocial* and *low/non antisocial* young adults' attitudes towards criminal justice agencies, namely the police and courts; and
- c) Attitudes toward criminal justice agencies among those who have had contact with the criminal justice system for offending or in relation to victimisation.

Methodology

Participants

The data used for these analyses come from 1140 ATP participants (505 males and 635 females) who completed questionnaires at 19-20 years of age in 2002 during the 13th ATP survey wave.

Measures

The measures used include: (a) the perceived risk of apprehension for various offences (b) civic mindedness; (c) attitudes towards the police and courts; (d) self-reported antisocial behaviour; and (e) self-reported contact with criminal justice agencies for offending or through reporting a victimisation incident to police.

Perception of the risk of apprehension

Young adults' perceptions of the chance of apprehension for the eight offences listed below were measured on a four-point scale ranging from 1 “*very low*”, 2 “*fairly low*”, 3 “*fairly high*”, to 4 “*very high*”.

- Shoplifting
- Motor vehicle theft
- Theft from a house or building
- Physical assault
- Driving while drunk
- Using marijuana
- Selling illegal drugs
- Fraud - passing worthless cheques, or fake money; illegally using another's credit/bank card or cheque

These responses were later dichotomised into *low* (combining “fairly” and “very” low) and *high* (combining “fairly” and “very” high). This dichotomisation was carried out to enhance interpretation of later analyses. Additionally, a composite measure of perception of the risk of apprehension was calculated by averaging responses across the eight types of offences (alpha reliability of 0.76).

Civic mindedness

Three areas of civic mindedness were measured at 19-20 years: trust in organisations, civic engagement, and community participation.

a) Trust in organisations

Young adults were asked to indicate how confident they were that the organisations listed below would act in a fair and reasonable manner. Confidence was measured on a four-point scale ranging from 1 “*not at all confident*”, 2 “*a little confident*”, 3 “*fairly confident*”, to 4 “*very confident*”.

- The media
- Trade unions
- Large business corporations
- Local councils
- State governments
- Federal government
- The public service
- Religious organisations

Responses were later dichotomised into *no/little confidence* and *fairly/very confident*, and a composite measure of trust in organisations was also calculated (alpha reliability of 0.83).

b) Civic engagement

Young adults were asked how often they had engaged in the following civically oriented activities in the past 12 months, using a four-point scale ranging from 1 “*not at all*”, 2 “*1-2 times*”, 3 “*3-4 times*”, to 4 “*5+ times*”.

- Taken part in an election
- Attended a public meeting
- Joined with people to resolve a local or neighbourhood problem
- Undertaken voluntary or charitable work
- Made a personal effort to care for the environment in one’s daily life
- Supported a political or lobby group in an effort to improve the environment
- Taken part in a demonstration
- Signed a petition
- Contacted the media regarding a problem
- Contacted a government official regarding a problem

Responses were later dichotomised into *no engagement* and *some engagement* and a composite measure of civic engagement was calculated (alpha reliability of 0.63).

c) Community participation

Young adults indicated if they had, in the past 12 months, participated, attended events or meetings of the following types of groups:

- Sporting, recreation or hobby groups
- Trade union, professional or technical associations
- Arts, culture or educational groups
- Self-help or support groups
- Church groups
- Environmental groups
- Human rights, community or welfare groups
- Political or public issue groups

A composite measure of community participation was calculated and used in subsequent analyses (alpha reliability of 0.59).

Attitudes towards the criminal justice system

Young adults’ confidence in the ability of the police and courts to adequately perform various functions related to dealing with crime (see Table 19) was also measured. For each function, confidence was measured on a four-point scale ranging from 1 “*none at all*”, 2 “*little*”, 3 “*some*”, to 4 “*a great deal*”. Participants were asked “How much confidence do you have in the ability of the police/courts to

Responses were also later dichotomised into *no/little* or *some/a great deal* of confidence. Composite measures of confidence in the police and confidence in the courts were also calculated (alpha reliabilities of 0.74 and 0.81, respectively).

Table 19 Questions assessing confidence in the police and the courts	
Police	Courts
Protect you from crime	Protect you from crime
Solve crimes	Discourage crime
Prevent crime	Impose fair sentences
Treat everyone equally	Treat everyone equally
Not use excessive force	Take victims needs seriously

Self-Reported Antisocial Behaviour

As described on page 10, a set of 21 questions was used to assess antisocial behaviour at 19-20 years of age. An index of frequent *antisocial* behaviour was used to classify participants into *low/non antisocial* or *highly antisocial* groups at 19-20 years. In brief, participants who reported committing three or more different types of antisocial acts during the past 12 months were classified as *highly antisocial*, while participants who reported committing fewer than three different types of antisocial acts were classified as *low/non antisocial*. Using these criteria, 177 young adults (15.5 per cent of respondents, 66.7 per cent of whom were male) were classified as *highly antisocial*, and 963 as *low/non antisocial*.

Contact with criminal justice agencies for offending, or to report a victimisation incident

As part of the 13th ATP data collection, ATP young adults were asked to report any contact with criminal justice agencies in the past 12 months for offending, or to report a victimisation incident. Individuals were categorised as having contact for offending if they indicated that they had in the past 12 months:

- been in contact with police for an offence (not driving-related), or
- been charged by police, or
- appeared in court as an offender

As previous research suggests that antisocial young people generally tend to hold less positive attitudes towards criminal justice agencies, this trend was controlled for in the comparisons undertaken. Two groups of *highly antisocial* young adults were compared – the sub-group who had contact with criminal justice agencies for offending, and the sub-group of antisocial individuals who did not. A total of 49 *highly antisocial* young people had been in contact with criminal justice agencies for offending, while 128 *highly antisocial* young adults had no such contact. This analysis thus investigated whether *highly antisocial* individuals who have had police contact for offending hold more negative attitudes than *highly antisocial* individuals who had not been apprehended for offending.

ATP participants were also asked if they had reported a victimisation incident to police in the past 12 months (see page 27 for details of this measure). As before, involvement antisocial behaviour was controlled in the comparisons made. Thus, the sub-group of 121 *low/non antisocial* young people who had contacted police to report a victimisation incident were compared to the remainder of the *low/non antisocial* group who had not reported a victimisation incident to police. This analysis investigated whether young people who are not offenders and who contacted police to report a victimisation incident hold differing attitudes to other young people who have not offended and have not contacted police to report a victim of crime incident.

FINDINGS

The following sections report findings concerning the relationship between motivations to comply with the law, attitudes toward criminal justice agencies, and antisocial behaviour. Firstly, two types of motivations to comply with the law - perceptions of the risk of apprehension and levels of civic mindedness - among the total sample, and among *highly antisocial* and *low/non antisocial* individuals are described. Secondly, statistical differences between *highly antisocial* and *low/non antisocial* young adults on these two aspects are reported. Thirdly, attitudes towards the police and courts for the total sample, and *highly antisocial* and *low/non antisocial* individuals are described, and fourthly, statistical differences between *highly antisocial* and *low/non antisocial* young adults' attitudes toward these agencies are examined. Finally, attitudes toward police and courts among those who have, or have not, had contact with the criminal justice system are explored.

Motivation to comply with the law among all, and among highly antisocial and low/non antisocial, young adults

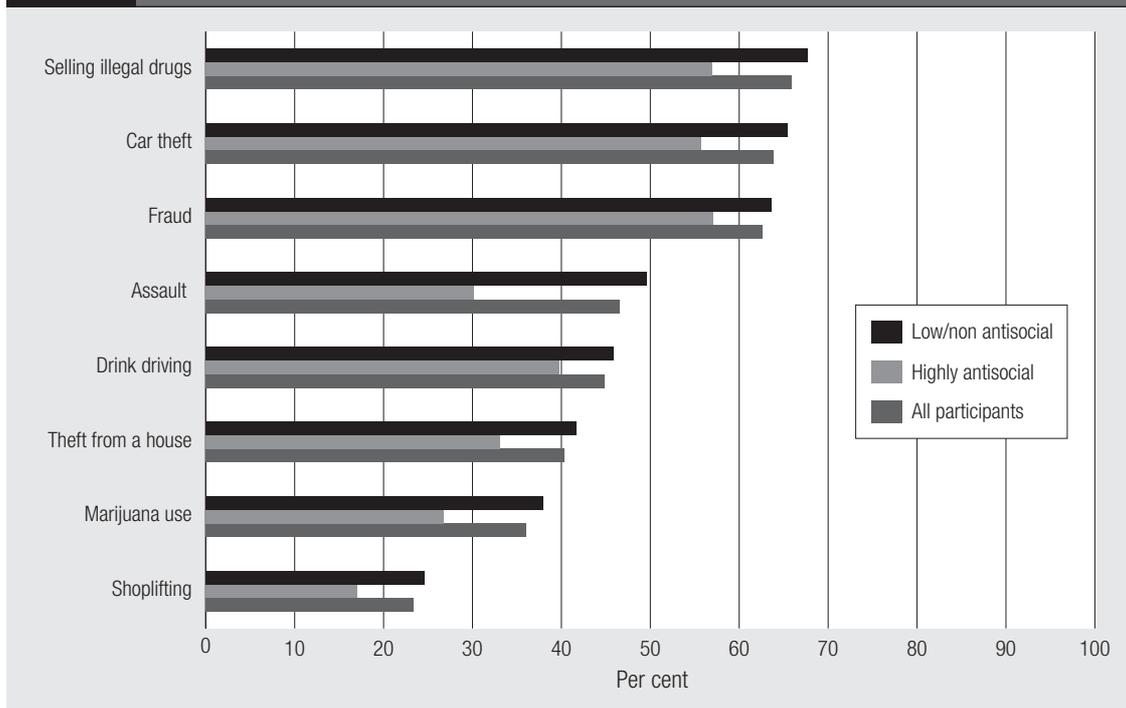
This section describes perceptions of the risk of apprehension associated with committing various offences, and levels of civic mindedness on the three indices used – trust in organisations, engagement in civic activities, and community participation.

The perceived risk of apprehension

Figure 47 displays the proportion of the total sample, as well as of the *highly antisocial* and *low/non antisocial* groups, who perceived that there would be a fairly or very high chance of apprehension if various offences were committed. A majority of young adults (approximately 60 per cent) believed there was a fairly/very high risk of apprehension for selling illegal drugs, car theft, and fraud, while close to half believed the risk of apprehension to be fairly/very high for physical assault, drink driving, and theft from a house (a range of 40-47 per cent). Only a minority perceived the risk of apprehension for marijuana use (36 per cent) and shoplifting (24 per cent) to be fairly/very high.

Fewer *highly antisocial* than *low/non antisocial* young adults believed there was a fairly/very high chance of apprehension for all types of offences, with group differences particularly marked on the likelihood of apprehension for assault. Thus, *highly antisocial* young people's perceptions of the risk of apprehension ranged from a low of 17 per cent (for shoplifting) to a high of 57 per cent (for selling illegal drugs), with the average perceived risk over all aspects of 40 per cent. Overall then, only a minority of *highly antisocial* individuals perceived there was a fairly or high risk of apprehension if an offence is committed.

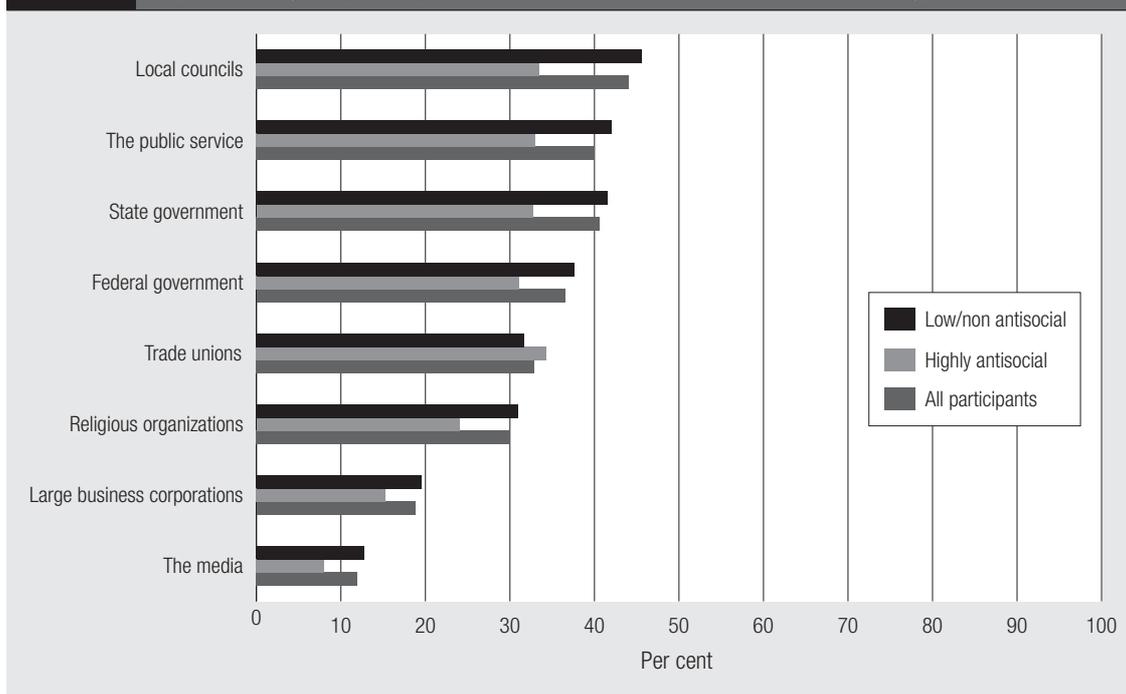
Figure 47 Proportions of the total sample, and of *highly antisocial* and *low/non antisocial* young adults, who perceived a *fairly or very high* chance of apprehension if various antisocial acts were committed



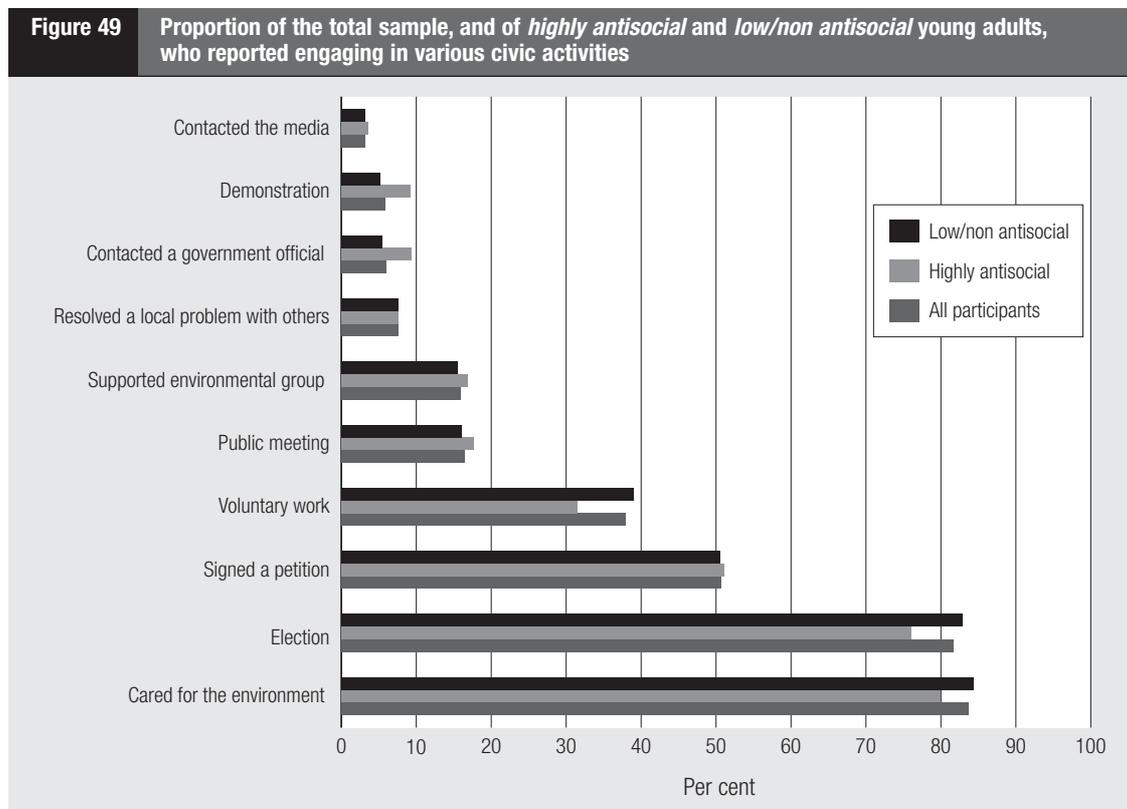
Civic mindedness

The proportion of the total sample, and *highly antisocial* and *low/non antisocial* groups, who were *fairly or very confident* of the reasonable conduct of various organisations is displayed in Figure 48. Around 40 per cent of young adults were fairly or very confident of the fair and reasonable behaviour of local councils, the public service and state and federal governments. About one third were confident of the reasonable conduct of trade unions and religious organisations, while the proportions indicating confidence in large business organisations and the media were relatively low (approximately 19 per cent and 12 per cent, respectively). Confidence among *highly antisocial* compared with *low/non antisocial* young adults was lower for almost all types of organisations, and ranged from 8 per cent (trust in the media), to 34 per cent (trust in trade unions), with an average rate of trust over all types of organisations of 26 per cent.

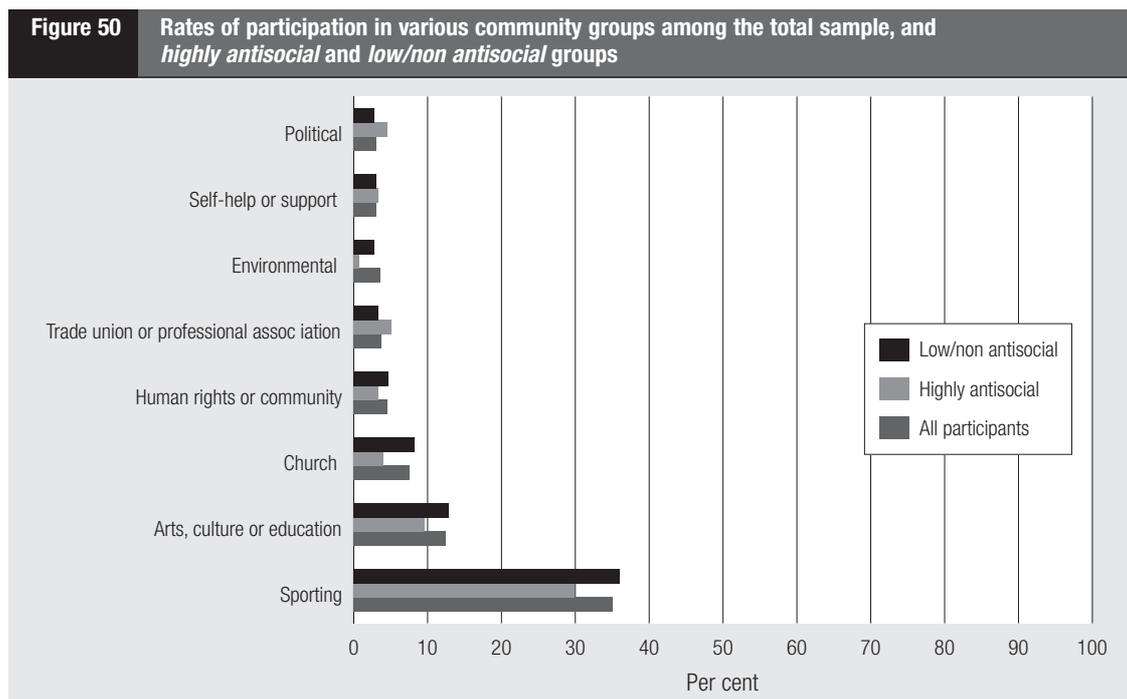
Figure 48 Proportions of the total sample, and highly antisocial and low/non antisocial young adults, who reported being *fairly or very confident* of the reasonable conduct of various organisations



Turning now to engagement in civically oriented activities (Figure 49), participation in elections and efforts to care for the environment were very common, with over 80 per cent overall reporting that they had engaged in these activities. Approximately half had signed a petition, and one third had undertaken volunteer work. However rates of participation in the other types of civic activities were relatively low (less than 16 per cent). *Highly antisocial* and *low/non antisocial* young adults were generally similar in their patterns of engagement in civically oriented activities.



Rates of participation in various community groups are shown in Figure 50. Participation rates tended to be low across the total sample, with generally less than 5 per cent of young adults found to participate in most types of groups. However, over one-third reported participating in sporting, recreational or hobby groups, while rates of participation for arts and culture and church groups were approximately 13 per cent and 8 per cent, respectively. Rates of group participation appeared to be very similar among *highly antisocial* and *low/non antisocial* individuals.



In summary, there was considerable variation in young adults' perceptions of the chance of apprehension for the different types of offences. For instance, six out of ten young people believed there was a fairly/very high risk of apprehension for selling illegal drugs, car theft, and fraud, while around one third thought the chance of apprehension for marijuana use would be fairly/very high. For all offences, fewer *highly antisocial* than *low/non antisocial* young adults believed there was a fairly/very high chance of apprehension.

Levels of civic mindedness among the total sample of young adults, as well as *highly antisocial* and *low/non antisocial* groups, were also described. Firstly, regarding trust in organisations, approximately 40 per cent indicated that they were confident of the reasonable conduct of local councils, the public service, and state and federal governments. In contrast, confidence in large business organisations and the media was low (approximately 19 per cent and 12 per cent, respectively). Confidence among *highly antisocial* compared with *low/non antisocial* young adults was lower for almost all types of organisations.

Secondly, there was considerable variability in levels of engagement in the different types of civically oriented activities. For instance, while participation in elections and efforts to care for the environment was very common (over 80 per cent), few had contacted the media regarding a problem, or had taken part in a demonstration (6 per cent in both cases). Rates of engagement in such activities appeared similar across *highly antisocial* and *low/non antisocial* individuals.

Finally, rates of participation in various community groups were generally low (less than 5 per cent), with the exceptions of participation in sporting/recreational (one third), arts, culture (13 per cent), and church groups (8 per cent). *Highly antisocial* young adults seemed very similar to *low/non antisocial* young adults in their rates of engagement in all types of community activities.

Statistical differences in motivations to comply with the law

Having described perceptions of the risk of apprehension and levels of civic mindedness among *highly antisocial* and *low/non antisocial* young adults, the question of whether there were statistical differences between the two groups on these aspects of motivations to comply with the law was examined. T test analyses were used to compare the groups on the composite measures of perceived risk and the three indices of civic mindedness - trust in organisations, engagement in civic activities, and community participation. Effect sizes⁶² were used to assess the strength of group differences on these three composite measures.

Table 20 summarises the details of t-test analyses comparing highly antisocial and low/non antisocial young adults. As can be seen, highly antisocial compared to low/non antisocial young adults were significantly lower on the composite measure of perceived risk of apprehension. This group difference was in the small effect size range. Highly antisocial compared to low/non antisocial young adults were also significantly lower on the composite measure of trust in organisations; this group difference was also in the small effect size range. On the other indices of civic mindedness, group participation and engagement in civic activities, there were no significant differences between highly antisocial and low/non antisocial young adults.

Table 20		T-test results comparing highly antisocial and low/non antisocial groups on motivations to comply with the law				
	Mean^a	t-test	d.f.	Sig.	Effect size (d)	
Perceived risk of apprehension						
Highly antisocial	2.10	4.85	1132	.001	.40 (small)	
Low/non antisocial	2.28					
Civic mindedness						
<i>Trust in organisations</i>						
Highly antisocial	2.03	3.09	1132	.002	.25 (small)	
Low/non antisocial	2.15					
<i>Group participation</i>						
Highly antisocial	.65	1.12	1138	n.s		
Low/non antisocial	.74					
<i>Civic activities</i>						
Highly antisocial	1.48	0.62	1106	n.s		
Low/non antisocial	1.50					

Note: ^a Scores on the composite measures of perceived risk of apprehension, trust in organisations and civic activities had a possible range of 1-4. Scores on the composite measure of group participation had a possible range of 1-9.

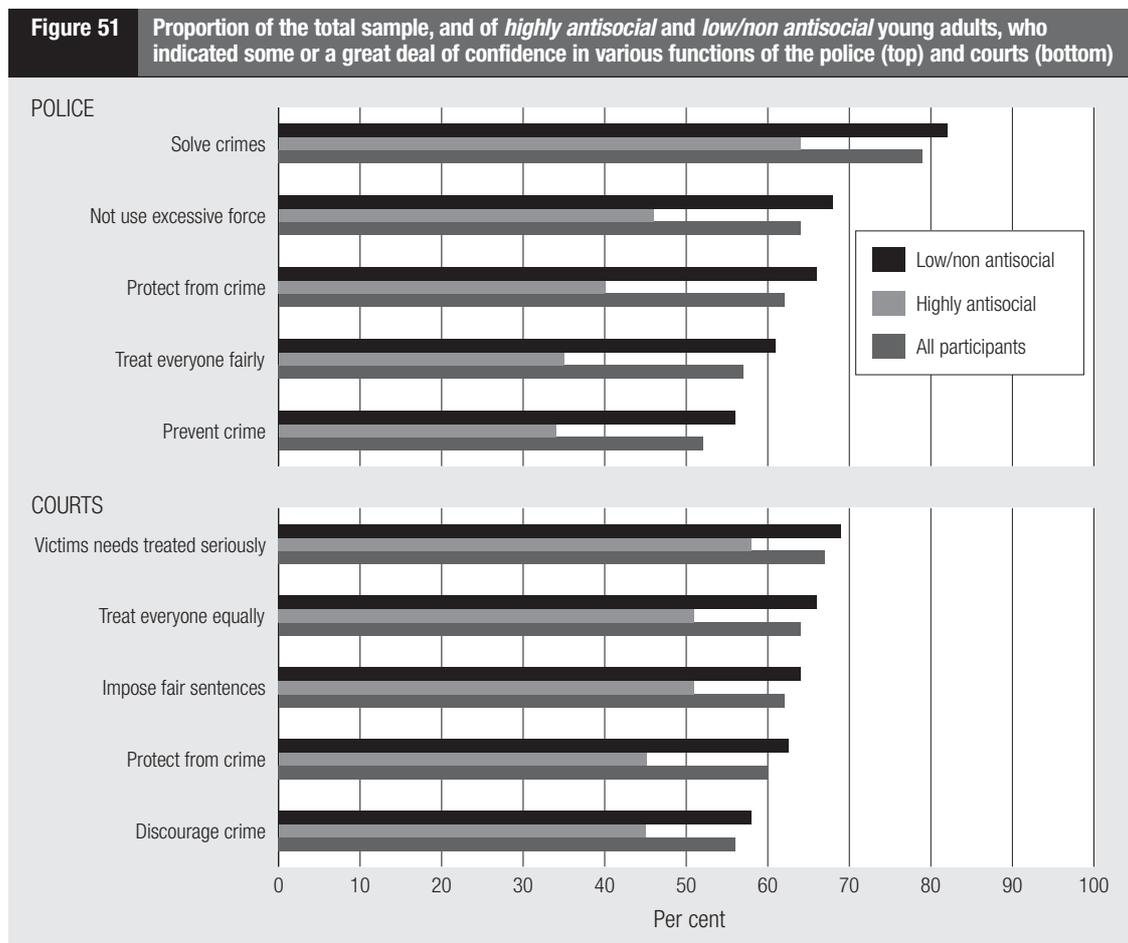
⁶² Cohen's (1988) effect size criteria were used to assess the strength of group differences across the various aspects. For t tests an effect size of .20 represents a small effect, .50 a medium effect and .80 a large effect (Cohen, 1988).

In summary, *highly antisocial* compared to *low/non antisocial* young adults had significantly lower perceptions of the risk of apprehension. In contrast, on only one of the three indicators of civic mindedness were significant group differences found, with highly *antisocial* individuals expressing significantly lower trust in organisations than *low/non antisocial* individuals. These findings may be relatively unsurprising, since this aspect of civic mindedness is most directly relevant to antisocial behaviour, whereas participation in civically oriented or community activities may be less clearly related to antisocial behaviour and did not differentiate the *highly antisocial* and *low/non antisocial* groups.

Attitudes towards police and courts

Attitudes towards police and courts among the total sample, and *highly antisocial* and *low/non antisocial* groups, are next described. Most young adults indicated that they had *some or a great deal* of confidence in each aspect of police performance (Figure 51). Approximately 80 per cent indicated at least some confidence in the ability of the police to solve crimes, while between 58 per cent and 65 per cent indicated confidence in the police to not use excessive force, to protect society from crime and to treat people fairly. Just over half indicated that they were confident of the ability of the police to prevent crime.

Highly antisocial and *low/non antisocial* young adults differed somewhat in their attitudes toward police, with *highly antisocial* individuals indicating less confidence than *low/non antisocial* individuals in all aspects of police performance (ranging from 34 per cent to 64 per cent over the five aspects, with an average level of confidence over all aspects of 44 per cent). Confidence among *highly antisocial* individuals in the ability of police to treat everyone fairly and to prevent crime was particularly low, with only approximately one-third of this group expressing confidence in these aspects of police performance.



The proportion of *highly antisocial* and *low/non antisocial* individuals, and young adults overall, who indicated *some or a great deal* of confidence in various functions of the courts is also shown in Figure 51. As was found with attitudes toward the police, a majority of young adults showed confidence in each aspect of the courts' performance. There was generally little variation in attitudes regarding each aspect of the courts' performance (between 56 per cent for the courts' ability to discourage crime and 67 per cent for the courts' ability to take victims' needs seriously). As before, *highly antisocial* individuals expressed less confidence than *low/non antisocial* individuals in all aspects of the courts' performance (ranging from 44 per cent to 58 per cent, with an average level of confidence over all aspects of 50 per cent).

In summary, a majority of young adults indicated that they had *some or a great deal of confidence* in all of the various functions of the police and courts. Attitudes of *highly antisocial* individuals were less positive than those of *low/non antisocial* individuals on each aspect of the police and courts' performance. Only about one third of *highly antisocial* individuals expressed confidence in the ability of police to treat everyone fairly and to prevent crime.

Statistical differences in attitudes toward police and courts

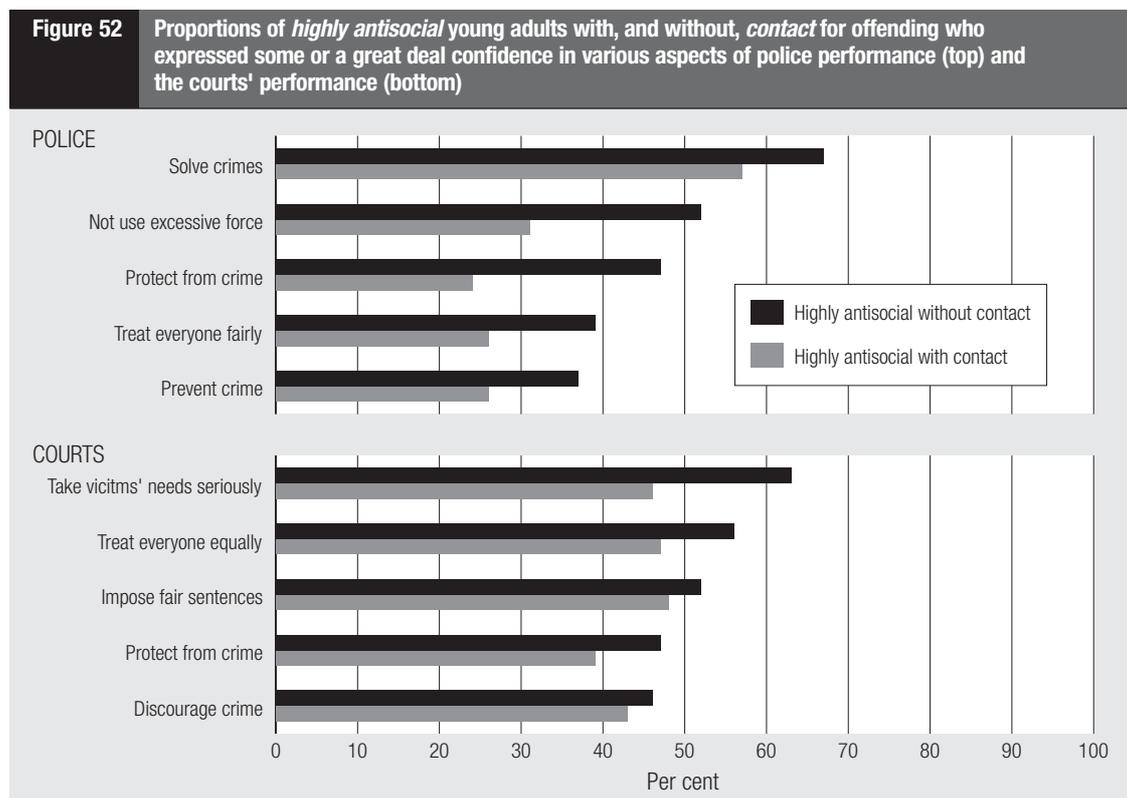
Details of t-test analyses comparing *highly antisocial* and *low/non antisocial* young adults on the composite measures of confidence in the police and the courts are displayed in Table 21. As can be seen, *highly antisocial* compared to *low/non antisocial* young adults expressed significantly lower confidence in the police and the courts. These group differences were in the medium effect size range and were hence relatively powerful.

Table 21		T-test results comparing <i>highly antisocial</i> and <i>low/non antisocial</i> groups on attitudes towards the police and courts				
	Mean ^a	t-test	d.f.	Sig.	Effect size (d)	
Confidence in the police						
Highly antisocial	2.31	9.30	1127	.001	.76 (Medium)	
Low/non antisocial	2.76					
Confidence in the courts						
Highly antisocial	2.37	6.29	1110	.001	.51 (Medium)	
Low/non antisocial	2.72					

Note: ^a Scores on the composite measures of confidence in the courts and confidence in the police had a possible range of 1-4.

Attitudes of those with contact with the criminal justice system

Finally, the issue of whether contact with criminal justice agencies is related to attitudes toward the criminal justice system was investigated. Two sets of analyses were undertaken: the first compared *highly antisocial* young adults *with*, and *without*, contact for offending on the composite measures of confidence in the police and courts. The second contrasted two groups of individuals who were *low/non antisocial* at 19-20 years: those young adults who reported an incident of victimisation to police and the remainder of the young adult sample who had not reported an incident to police.



Attitudes towards the police and courts of highly antisocial young adults who had, or did not have, contact with police or courts for offending

Confidence among *highly antisocial* young adults with, and without, *contact* for offending on various aspects of police and courts' performance are next described. As Figure 52 shows, *highly antisocial* young people without criminal justice contact consistently expressed more confidence than their *highly antisocial* counterparts who had been in contact with the criminal justice agencies for offending.

T-test analyses revealed that *highly antisocial* individuals with contact for offending, compared to *highly antisocial* individuals without such contact, were significantly lower on the composite measure of confidence in the police (Table 22). This group difference was in the small effect size range. The groups did not significantly differ on the composite measure of confidence in the courts.

Table 22 T-test results comparing the attitudes towards criminal justice agencies of highly antisocial young adults with, and without, contact with the police or courts for offending					
	Mean ^a	t-test	d.f.	Sig.	Effect size (d)
Confidence in the police					
Contact for offending	2.08	2.96	175	.004	.48 (small)
No contact for offending	2.39				
Confidence in the courts					
Contact for offending	2.32	0.75	174	n.s	
No contact for offending	2.40				

Note: ^a Scores on the composite measures of perceived risk of apprehension, confidence in the courts and confidence in the police had a possible range of 1-4.

Attitudes towards the police and courts among low/non antisocial young adults who did, or did not, report a victimisation incident to police

Figure 53 shows a consistent but weak trend for *low/non antisocial* individuals who had reported a victimisation incident to police to express less confidence in many aspects of police functions than their counterparts who had not contacted police regarding such an incident. However, Table 23 shows that this trend did not reach statistical significance. The attitudes towards the courts held by the two sub-groups were very similar.

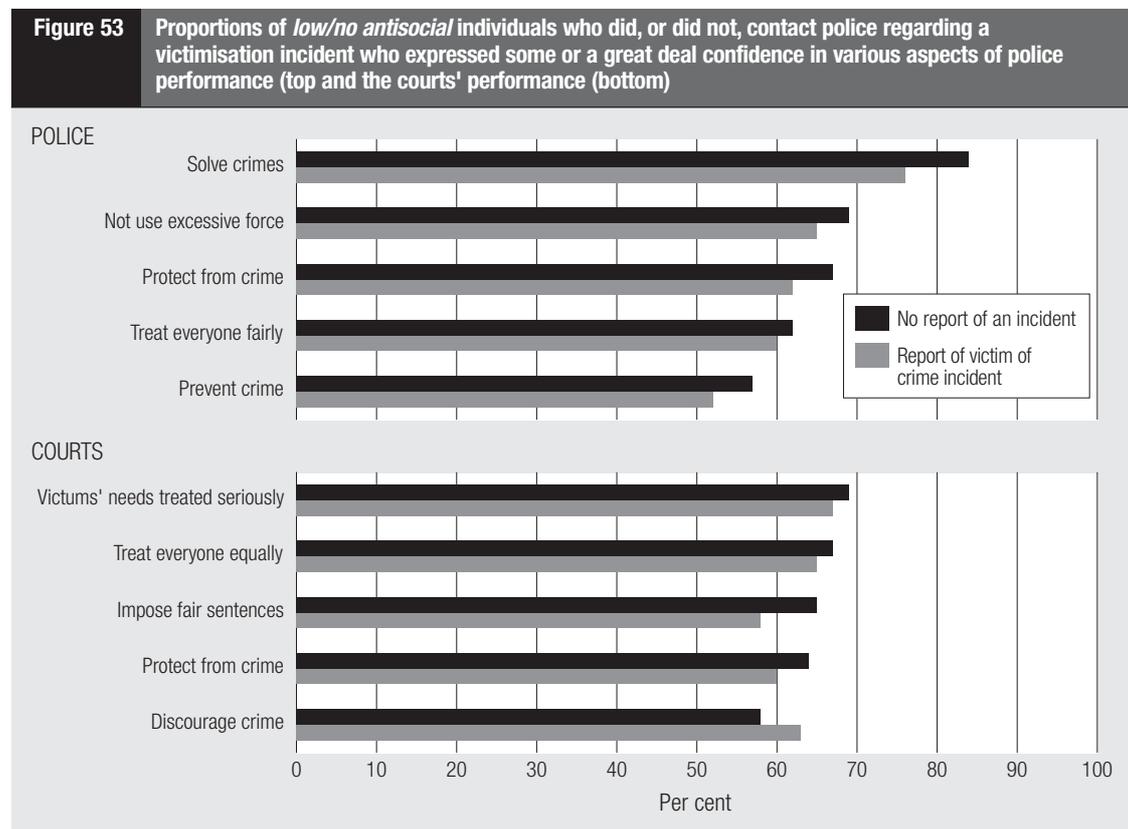


Table 23 T-test results comparing the attitudes towards police and courts of <i>low/non antisocial</i> individuals who did, or did not, report a victimisation incident to police					
	Mean ^a	t-test	d.f.	Sig.	Effect size (d)
Confidence in the police					
Contact regarding incident	2.68	1.64	940	n.s	
No contact	2.77				
Confidence in the courts					
Contact regarding incident	2.69	0.63	924	n.s	
No contact	2.73				

Note: ^a Scores on the composite measures of perceived risk of apprehension, confidence in the courts and confidence in the police had a possible range of 1-4.

In summary, *highly antisocial* individuals with contact with the criminal justice system for offending, compared to *highly antisocial* individuals without such contact, expressed significantly lower confidence in the police. These two groups did not significantly differ on their confidence in the courts.

Low/non antisocial young adults who reported a victimisation incident to police were similar to the remainder of the *low/non antisocial* sample in their levels of confidence in the police and courts.

Discussion of findings and implications

In summary, a number of issues concerning the relationship between motivations to comply with the law, attitudes toward criminal agencies, and antisocial behaviour were explored. These included relationships between the perceived risk of apprehension, civic mindedness, and antisocial behaviour among young Australian adults aged 19-20 years; differences between *highly antisocial* and *low/non antisocial* young adults in attitudes towards criminal justice agencies; and the attitudes of those who have had contact with criminal justice agencies toward these agencies.

Overall, considerable variation was found in young adults' perceptions of the risk of apprehension for differing types of offences. For instance, two thirds believed there was a fairly/very high risk of apprehension for selling drugs, while only about one in four thought there was a high risk of being caught for shoplifting. On the other hand, community engagement, particularly participation in community groups and activities, was generally low over the sample as a whole. Thus, less than 5 per cent had participated in political, human rights groups and 16 per cent or fewer reported having attended a public meeting, or contacting the media regarding a problem.

Examination of the relationship between motivation to comply with the law and antisocial behaviour revealed that *highly antisocial* compared to *low/non antisocial* young adults had significantly lower perceptions of the risk of apprehension. In contrast, on only one of the three aspects of civic mindedness were significant group differences found, with *highly antisocial* individuals expressing significantly lower trust in organisations than *low/non antisocial* individuals.

Also investigated was the relationship between antisocial behaviour and attitudes toward police and courts. Substantial connections were found, with the *highly antisocial* group expressing significantly lower confidence in the police and courts than the *low/non antisocial* group (medium effect sizes). Finally, the question of whether contact with the criminal justice system affected attitudes towards police and courts was investigated. *Highly antisocial* individuals with contact for offending had significantly less confidence in the police than their antisocial counterparts who did not have such contact. This group difference was in the small effect size range. These two sub-groups did not differ significantly in their attitudes towards the courts. There were no differences between *low/non antisocial* young adults who had, or who had not, reported a victimisation incident to police in their confidence in the courts and police.

Some conclusions and implications are now discussed:

Motivation to comply with the law: the perceived risk of apprehension was most powerfully related to antisocial behaviour

The relationship between antisocial behaviour and two types of motivation to comply with the law was examined. Perceptions of the risk of apprehension were found to significantly differentiate between *highly antisocial* and *low/non antisocial* young adults, with *highly antisocial* individuals holding significantly lower perceptions of risk compared to *low/non antisocial* individuals. These findings are consistent with previous research (see Nagin 1998).

Importantly, on 5 of the 8 aspects assessed, few *highly antisocial* individuals (from one fifth to one third) believed there was a fairly or high chance of apprehension (for shoplifting, marijuana use, theft from a house, drink driving and assault). Only on 3 of the 8 aspects (selling drugs, car theft and fraud) did between 50 and 60 per cent of *highly antisocial* individuals believe

there was a fairly or high chance of apprehension. Thus, perceptions of the risk of apprehension for offending among *highly antisocial* individuals tended to be quite low. Together with previous findings that *highly antisocial* individuals tend to be more attracted to sensation seeking (Vassallo et al. 2002), the current findings may suggest a greater propensity for a risk-taking personality style among *highly antisocial* individuals.

Although the *highly antisocial* and *low/non antisocial* groups did not differ in participation in civic or community activities, it should be noted that participation levels, particularly in community activities, tended to be low among this sample of young adults. This finding is consistent with other Australian community studies (see Bowes, Chalmers and Flanagan 1996; Print 1994; Noller and Callan 1991), as well as previous ATP studies on civic mindedness at earlier ages (Da Silva, Sanson, Smart and Toumbourou 2004; Smart, Sanson, Da Silva and Toumbourou 2000). Hence, there may not have been enough variability within the ATP sample (i.e. low sensitivity) to detect any possible influence of these factors. Since few young adults engaged in these behaviours, the current findings do not discount the possibility that high levels of civic participation may have protective effects against the development of antisocial behaviour, as suggested by Moore and Allen (1996). Further investigation of this issue would require a larger sample of young adults who actively engage in community groups and civic activities.

Thus, the findings provide mixed support for theories that propose that civic mindedness is important in motivating compliance with the law (see Moore and Allen 1996; Uggen and Janikula 1999; Catalano and Hawkins 1996). While *highly antisocial* and *low/non antisocial* young adults differed on trust in organisations, which is a measure of values and attitudes, the groups did not differ on aspects of civic mindedness that involve active participation (engagement in civic activities and community groups). This suggests that attitudinal aspects of civic mindedness, which may have arisen from feelings of connection, trust and identification toward other people and the wider community, are most relevant to antisocial behaviour.

Most young adults held positive attitudes toward the police and the courts

Most young adults were found to hold positive attitudes toward the police and courts. Across the various aspects of police and court functions, an average 63 per cent of young people indicated that they had some or a great deal of confidence in the effectiveness of these agencies. Interestingly, this proportion was somewhat higher than the proportion who were confident of the reasonable conduct of other organisations (e.g., local councils, the media, state government). This may have been affected to some degree by the employment of a single global measure to assess confidence in community organisations, whereas several aspects of the police and courts' performance were measured, allowing a more differentiated range of opinions to be obtained.

Overall, the findings support previous research suggesting that young Australian adults are generally positive in their attitudes toward criminal justice agencies (Rigby et al. 1987; Levy 2002). However, comparison of the current findings with previous studies that examined the attitudes held by the general population suggests that the levels of confidence are perhaps slightly lower among this young adult sample. For instance, Mayhew (1994) reported that over a range of police functions on average 73 per cent of a general sample of adult Australians believed that the police were doing a "good job".

The finding that a majority of young people expressed favourable attitudes toward the police and courts is encouraging. For instance, positive attitudes may reflect a willingness to contact police to report crime, and to obtain access to justice, services and other forms of support, should it be needed. From the point of view of criminal justice agencies, it suggests that most young people may be prepared to assist in the activities undertaken by these agencies (for example, willingness to testify in court, report crime, join neighbourhood groups to fight crime) (see Tyler 1990). Thus the findings present a reasonably encouraging assessment of the views held by the majority of young people toward police and courts.

Highly antisocial individuals tended to have more negative attitudes towards the police and courts

While the majority of young people held positive views of criminal justice agencies, there was still a sizeable minority of young adults who expressed lower levels of confidence in the performance of the police and courts. There were also powerful differences between *highly antisocial* and *low/non antisocial* individuals on attitudes toward criminal justice agencies, with the *highly antisocial* group expressing significantly lower confidence in the police and courts (only 47 per cent of these individuals reported some or a great deal of confidence in these agencies overall). Furthermore, it was found that *highly antisocial* young people with contact with criminal justice agencies for offending expressed lower overall confidence in the police than *highly antisocial* individuals without such contact. On the other hand, *low/non antisocial* individuals who had, or had not, reported a victimisation incident to police held similar views toward police and courts.

Less positive attitudes toward criminal justice agencies among certain groups of Australian youth have been documented elsewhere (see Adler et al. 1992; O'Connor 1994). There are several reasons why highly antisocial individuals may hold less positive attitudes. First, such attitudes may be an outcome of earlier encounters with criminal justice agencies that restricted these young people's participation in particular activities or lifestyles, for example antisocial behaviour. Second, negative values and viewpoints towards authority or the "establishment" may have developed within certain family, school and community contexts. Third, it is also possible that some young people may have experienced aversive interactions with the criminal justice

system, such as a disproportionate amount of police contact, discriminating or disrespectful treatment, unfavourable court decisions, and other forms of differential treatment (see Youth Justice Coalition 1994; New South Wales Ombudsman 1994).

It should be noted, however, that most low/non antisocial individuals who had reported a victimisation incident to police expressed positive attitudes toward police and the courts, perhaps reflecting satisfaction with the way these agencies attended to their needs, and suggesting that these agencies' interactions with the general public are generally handled in an appropriate manner. It is also important to note that attitudes toward criminal justice agencies may be influenced by other sources, such as the media coverage they receive, including both factual and fictional depictions of police and crime. For instance, Eschholz et al. (2002) found that depictions of police on reality television programs can influence perceptions of the nature and effectiveness of police activities.

As outlined earlier, positive relations between young people and criminal justice agencies are important and may contribute to effective crime prevention strategies. Furthermore, it has been proposed that attitudes toward police and courts may also be important in motivating compliance with the law (see Tyler and Huo 2002). As such, initiatives aimed at improving the attitudes held by young people may have a number of important benefits. There is evidence that youth involvement in police-community programs such as Blue Light discos, Police Youth Clubs as well as school visits by police can have beneficial effects on young people's attitudes toward criminal justice agencies, in addition to reducing offending (James 1994). It is possible that promoting involvement in such programs during childhood and adolescence may have continuing beneficial effects into adulthood and strengthen positive attitudes toward criminal justice agencies.

In conclusion, connections between two types of motivation to comply with the law – perceptions of the risk of apprehension and civic mindedness – and engagement in antisocial behaviour were investigated. Perceptions of the risk of apprehension were inversely related to involvement in antisocial behaviour. Only one of the three aspects of civic mindedness assessed, trust in organisations, differentiated between *highly antisocial* and *low/non antisocial* young adults. However, active participation, particularly in community activities, was low. Therefore, the finding that *highly antisocial* and *low/non antisocial* young adults did not differ on these two aspects does not discount the possibility that active participation may have positive effects on antisocial behaviour. Overall, perceptions of the risk of apprehension appeared to be a more salient influence on engagement in antisocial behaviour than civic mindedness.

In general, most young adults were found to hold positive attitudes toward the police and courts. Across a range of aspects, an average 63 per cent of young people indicated that they had some or a great deal of confidence in the effectiveness of these agencies. However, a sizeable minority, particularly those who were *highly antisocial* or had contact with police and courts for offending, were less positive in their attitudes towards the police and courts. In fact, only a minority of *highly antisocial* young people (an average of 47 per cent over the various aspects) expressed some or a great deal of confidence in the police. However, most *low/non antisocial* individuals who had reported a victimisation incident to police expressed positive attitudes toward police and the courts, perhaps reflecting satisfaction with the way these agencies attended to their needs. A number of reasons for the lower confidence of these individuals were outlined, as were approaches which offer promise in promoting the development of positive attitudes.



Concordance between official records and self-reports

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Concordance between official records and self-reports

Research into criminal or antisocial behaviour can make use of two sources of information: official records of offences recorded by criminal justice agencies, and self-reports of criminal or antisocial activities (Coleman and Moynihan 1996). Official records tend to be used more frequently than self reports, because these data are regularly collected and reported upon as part of policing activity. While the current series of studies has focused on self-report measures, both sources of information have merits, as well as limitations (Huizinga and Elliott 1986). Official police records do not contain all offences committed, as they only cover offences which are detected by or reported to police. Self reports may be affected by the limited range of offences covered, errors of recall, and the willingness of the individual to divulge sensitive personal information. Hence, it is useful to compare the two sources of data to evaluate how the different data sources may differ, and to explore differences in the patterns and profiles of antisocial behaviour that emerge from each source of information.

This section will compare official records from Victoria Police with the self-report measures of antisocial behaviour from participants in the Australian Temperament Project.

Official records

Official police records contain information on persons apprehended and subsequently processed (by way of cautions, summons or arrests) by the police as part of their law enforcement activities. These criminal histories constitute a documented record of offending for which alleged offenders have been apprehended, as well as the actions subsequently taken by police and courts. Such records have been widely used as measures of criminal behaviour. For instance, when aggregated, they are used to provide crime trends and crime patterns, to evaluate the effectiveness of police or crime prevention policies, and to inform the distribution of police resources (Maguire 2002). Official records are also often used in research into those who engage in criminal activity. Thus, many studies that have investigated the developmental precursors of criminal behaviour have made use of official records of offending (for example, Farrington 1989; Fergusson, Swain-Campbell and Horwood 2004).

While official criminal records are widely used for a number of purposes, they have limitations. Firstly, official records do not include offences that go undetected by police, and/or are unreported by victims or witnesses. Secondly, research indicates that the operations and procedures of criminal justice agencies may differentially target certain offences and types of individuals (Babinski, Hartsough and Lambert 2001). Thus, some argue that the individuals who appear in official criminal records tend to be young, male, of lower socio-economic status, and reside in disadvantaged geographic locations, and may not be representative of the population who offend (Babinski et al. 2001). (For comprehensive reviews of literature concerning the limitations of official crime statistics, see Carcach and Makkai 2002; Coleman and Moynihan 1996, and Maxfield and Babbie 2001).

In summary, while there are advantages in using official crime records to investigate criminal behaviour trends (for example, their ready availability), these records may not fully reflect the diversity of individuals who are involved in offending, or the frequency and nature of offending.

Comparisons of official records with self-reports

Since their development in the 1960s, self-report measures of antisocial behaviour⁶³ have been used in research into offending behaviour (Coleman and Moynihan 1996). A principal objective in the development of these self-report measures was to avoid the limitations associated with official crime statistics.

Two types of approaches use self reports. The first provides information about offending and antisocial behaviour by directly asking individuals about their involvement in these types of activities. The second employs crime victimisation surveys to gather information from representative samples about the nature and frequency of crimes as reported by those who experience victimisation incidents, providing a more indirect measure of offending. This particular section focuses primarily on the first type of approach, that is, self reports of offending and antisocial behaviour (an account of the study's findings regarding victimisation is contained on pages 23-40).

⁶³ Note one reason why the term "antisocial" rather than "criminal" is used to describe behaviours assessed in self-report measures is that these behaviours are not necessarily detected by criminal justice agencies, or sometimes cannot be defined as "criminal" (Coleman and Moynihan, 1996).

The findings of studies that have used self-report measures of criminal and antisocial behaviour confirm that much offending behaviour does not come to the attention of police, and hence does not appear in criminal records (Coleman and Moynihan 1996). This is most evident for certain types of offences, particularly those against a person (violent offences). Furthermore, a number of studies suggest that the characteristics of offenders revealed by official records differ from those obtained via self reports (Coleman and Moynihan 1996). For example, comparisons of offenders and non-offenders identified by self reports reveal less marked gender and SES differences than suggested by official records (Maguire 2002). Thus, self reports may provide a somewhat different profile of the individuals who commit criminal offences than that provided by official records.

However, the comparison of self reports and official records is not straightforward. The behaviours covered in self report surveys often include acts that are not criminal offences (such as skipping school in the current study) and therefore would not merit the attention of police. Additionally, self reports generally focus on relatively minor criminal acts, and do not usually seek information about more serious offences, for example murder or bank robberies (Maguire 2002). Thus, as Maguire (2002) notes, self reports provide an “alternative, rather a directly comparable, overall picture of crime to that offered by police statistics” (pp. 352). However, individuals who self report involvement in more serious, or more frequent, offending tend also to appear in official records as offenders, suggesting reasonable concordance between both sources of information for these type of offenders. Likewise, there are large gender disparities in self reports of violent offending, paralleling the trends available from official records, indicating that the agreement between official records and self reports may be higher for violent offences than other types of offences (Maguire 2002).

In summary, comparisons of self-reports and official records suggest that much offending does not appear in official criminal records. Furthermore, certain types of individuals have been found to more frequently appear in official records (for example, young males), than in self reports. However, definitions of antisocial behaviour include acts that are not considered criminal and often do not cover the full range of offending behaviours. Furthermore those who self report engagement in serious offences are also most likely to appear in official records. In sum, each method has positive and negative features.

The question of accuracy

As indicated above, the accuracy of both self-report measures and official records to gather information about antisocial and criminal behaviour has been questioned. In terms of self report, individuals can be reluctant to reveal negative information about themselves or conversely, may exaggerate their engagement in such behaviour. In addition, self-report measures may be limited by respondents’ errors in interpretation or recall. For instance, it may be difficult for an individual to recall the frequency, nature and timing of engagement in antisocial behaviours, which can be a source of inaccuracy (Coleman and Moynihan 1996).

Relatively few studies have matched the information provided by official police records to self-reports of antisocial and criminal behaviour (Babinski et al. 2001). Following a review of the literature, Huizinga and Elliott (1986) concluded that most offending behaviour which appears in official records is also reported by respondents. More recently, Maxfield Welier and Widom (2000) found that the agreement between self-reports and official records varied according to offence type. Most officially recorded drug, public order, property offences and over half of violent offences were also found to be self-reported, but agreement between self-report and official records was less than 30 per cent for sexual assault, suggesting these incidents may be under-reported in self reports.

Some studies have also investigated the agreement between self reports and official records regarding contact with police for offending and arrests. The review by Huizinga and Elliott (1986) concluded that most individuals who have been arrested and who appear on official records subsequently confirm this in their self-reports. However, there have been findings that some individuals who report being arrested for offending do not appear on official records. For example, Maxfield et al. (2001) found that 21 per cent of respondents who reported having been arrested had no official history of arrest.

While such discrepancies may result from the exaggeration of respondents, the lack of agreement may also be due to inaccuracies in official records (Huizinga and Elliott 1986; Maxfield et al. 2001). A further source of discrepancy may be a misunderstanding of the nature of contact with police by the individuals apprehended. For instance, a person may have been stopped or apprehended by police, and not have this officially recorded because no offence occurred or the evidence was insufficient, but may misinterpret this and erroneously self-report being cautioned. Thus, the various limitations associated with both types of data collection methods may lead to discrepancies between self reports and official records, and attempting to determine which source of information is most “accurate” may not be a useful exercise. Rather, the comparison may be useful for other reasons, such as checking the reliability of self reports, or identifying systematic biases or areas of disagreement in official records that might shed light on policing methods, or may suggest the need for self report information to supplement official records in the analysis of crime trends.

It is also useful to compare self reports and official records on other types of data, in addition to the data concerning offending. It is possible to compare the two sources of information on contact with criminal justice agencies regarding a victimisation incident. Agreement might be higher for these incidents, as some of the causes of inaccuracies in self reports of offending previously described (such as reluctance to reveal negative information about oneself) may be less relevant, and these types of incidents may also require more detailed official recording, for example, for insurance purposes or to underpin further police action. There is very little data on this issue to date. Thus, an examination of the concordance between self reports and official records for victimisation incidents may be useful in further clarifying the accuracy of both sources of information. For example, if concordance is higher for self reports of victimisation incidents than for self reports of antisocial behaviour, this could suggest a degree of bias in self reports of antisocial behaviour. If accuracy is similar for self reports of victimisation and antisocial behaviour when compared to official records, but self reports reveal a much high rate of offences than official records, then the comprehensiveness of official records might need to be considered.

This section first reports an investigation of the similarities and differences between the official records maintained by police and self reports of i) criminal acts, ii) contact with criminal justice agencies for offending, and iii) contact with police regarding victimisation incidents. It then addresses iv) similarities and differences in the profiles of individuals identified by official records and self reports. To the authors' knowledge, these issues have not been investigated in an Australian setting, and previous research has relied heavily on U.S. and other international data.

The following issues are examined:

- a) the agreement between self reports and official records concerning offending (including traffic and other types of offences), as well as contact with police and courts for offending. This issue is investigated firstly, by ascertaining whether offences which appear on official records are also self reported, and secondly, by investigating how often the information provided by self report is found in official records;
- b) the agreement between official records of victimisation incidents and self reports of contact with police and courts regarding such incidents. This issue is also examined firstly, by investigating whether the information on victimisation found in police records is also self reported, and secondly, by investigating whether self reports of contact with police to report a victimisation incident are matched by a corresponding official record; and
- c) similarities between the group identified by official records as offenders and the group identified as *persistently antisocial* by self report on characteristics such as gender, family socio-economic background, and local area characteristics.

Methodology

Official records data

At 19-20 years, as part of the thirteenth data collection wave completed during 2002, Australian Temperament Project participants were asked to give written consent for the project team to access their official Victoria Police record⁶⁴. It should be noted that this methodology was approved by the Department of Justice's Research Ethics Committee, as well as the Australian Institute of Family Studies' Ethics Committee.

Of the 1140 individuals included in the current analyses, a total of 843 (74 per cent) gave permission for access to official records. The official records search took place during 2003. The process for obtaining official records data entailed preparing a data file containing the full name, date of birth, current and previous addresses, telephone numbers and study identification number of all participants who had given consent, and providing this file to Victoria Police and Tenix (the agency which manages traffic offending records on behalf of the Victorian Department of Justice Enforcement Management)⁶⁵. Following the official records search, a file was supplied to the ATP research team which contained only the individual's study identification number and the details of any official records found, excluding all other details (for example, address, date of birth).

To ensure the accuracy of the search process, a second search was undertaken, using the same process. No additional cases of criminal offending were found, but the second search of traffic records revealed a further 71 cases (i.e. one third of cases were revealed by the second search).

Australian Temperament Project data

Information gathered as part of the last four data collection waves (at 13-14, 15-16, 17-18 and 19-20 years) was used. This data consisted of self reports of engagement in antisocial behaviour and contact with criminal justice agencies for offending

64 The reasons for the request of access to official records, a description of the methodology to be employed, and the methods used to ensure confidentiality of the data obtained, were explained to participants in an information sheet. Individuals who were not residing in Victoria were excluded from the official records search.

65 The assistance of Victoria Police and Tenix Solutions is gratefully acknowledged.

(described on page 10 and in Vassallo et al., 2002); experience of victimisation (see page 27); parent reports of family characteristics, such as family socio-economic background – a composite score based on the mother’s and father’s occupational and educational rankings (see Prior et al. 2000 for further details); and local area characteristics (see Smart et al. 2003).

FINDINGS

Comparison of those who did and did not give consent

Preliminary analyses were conducted to compare the characteristics of those who consented to the access of official records with those who did not consent. These analyses investigated whether there were systematic differences between those who gave consent and those who did not on gender, residence locality, the characteristics of the neighbourhoods in which they lived, their involvement in antisocial behaviour, and their reported contact with police and courts. These analyses aimed to determine whether a) those who did not provide consent might have done so because they had an official record for offending and were reluctant to reveal this, and b) those who gave consent tended to be less involved in antisocial behaviour or criminal offences.

Table 24 compares those who did, or did not, give consent on socio-demographic characteristics. The sole significant difference found between the two groups was on gender, with a lower proportion of males (42 per cent) among the sub-group who gave consent than the sub-group who did not give consent (53 per cent). There were no differences in terms of the family’s socio-economic background; current residence in a metropolitan, regional or rural location; or the characteristics of the local government area in which participants resided⁶⁶.

Next, rates of antisocial behaviour among those who provided consent were compared to the rates obtained for those who did not provide consent as measured across the last 4 data collection waves. The criterion of involvement in 3 or more different types of antisocial acts within the previous 12 months was used to classify individuals as “*highly antisocial*” or “*low/non antisocial*” at a particular time point. As Table 25 shows, those who did not give consent had significantly higher rates of antisocial behaviour at 15-16 and 19-20 years, and tended also to have higher rates at the other two time points, although not significantly so. Additionally, the percentage of the entire ATP cohort who were *highly antisocial* at the various time points is shown. As can be seen, rates of self reported antisocial behaviour were consistently slightly lower among individuals who provided consent than among the overall ATP cohort, and slightly higher among those who did not give consent by comparison with the overall cohort rate.

Characteristic	Per cent of those who consented	Per cent of those who did not consent
Sex (male) ^a	41.1	52.8
Low family socio-economic status	24.1	20.0
Location		
Metropolitan	68.3	67.3
Regional	12.7	13.5
Rural	19.0	19.3
Local Government Area characteristics		
High unemployment	15.8	15.2
High crime	33.4	35.9
Low income	9.1	6.3
High growth	13.4	11.7
High lone-parent families	19.4	20.2
High disadvantage	18.6	15.7
Low economic resources	17.5	13.5
Low education and occupation	15.3	13.5

Note: ^a Chi square = 12.29, p <.01.

66 Information about local government area characteristics (LGAs) was obtained from the CPV-VU dataset, which gathered together measures from 1996 Australian Bureau of Statistics census data and Victorian data sources. The indicators used here were formed by classifying LGAs ranked in the most disadvantaged 20 per cent of Victoria on a particular characteristic as ‘disadvantaged’ on that characteristic (for example, low income), while those ranked above this were classified as ‘not disadvantaged’ on the characteristic.

Age (years)	Percentage of those who consented who were highly antisocial at this time point	Percentage of those who did not consent who were highly antisocial at this time point	Total ATP cohort percentage of highly antisocial individuals at this time point
13-14 ^a	10.3	12.4	12.4
15-16 ^b	16.7	23.3	19.7
17-18 ^a	16.9	22.9	20.0
19-20 ^c	13.5	22.5	15.5

Notes: ^a Comparison of those who did, and did not, give consent: Chi square = n.s.
^b Comparison of those who did, and did not, give consent. Chi square = 5.33, p <.05.
^c Comparison of those who did, and did not, give consent: Chi square = 10.05, p <.01.

The question of whether individuals who did not give consent had higher rates of apprehension by criminal justice agencies for offending was next investigated. There were no significant differences between those who gave consent and those who did not on rates of self-reported police contact for offending at 15-16 and 17-18 years (see Table 26). However, while there were very few adolescents who had been charged by police at the age of 15-16 years, or appeared in court for a criminal offence at the age of 17-18 years, significantly more of those who did not give consent had experienced such contact. In addition, at 19-20 years, those who did not consent reported significantly higher rates of every type of police and court contact, except for detection for speeding and reporting a victimisation incident to police.

Age (years)	Form of contact for offending	Percentage of individuals who consented	Percentage of individuals who did not consent	Overall ATP cohort percentage
15-16	Contact, cautioned by police	12.6	14.1	13.4
	Charged by police ^a	0.9	2.7	1.9
	Been in court as offender	0.3	0.4	0.6
17-18	In contact with police	11.2	13.2	12.3
	Charged by police	2.5	3.8	3.4
	Appeared in court ^b	0.4	1.9	1.3
19-20	Convicted of an offence	0.1	0.8	0.6
	Police contact ^c	4.3	8.4	5.4
	Charged by police ^d	3.6	7.0	4.6
	Appeared in court as an offender ^e	1.4	5.0	2.4
	Convicted of an offence ^f	1.2	4.7	2.1
	Contact for driving-related offence ^g	19.9	25.2	21.8
Apprehended for speeding	26.5	32.0	29.3	
Reported a victimisation incident to police	16.0	15.9	16.0	

Notes: ^a Chi square = 4.52, p <.05. ^b Chi square = 5.60, p <.05. ^c Chi square = 7.17, p <.01. ^d Chi square = 4.49, p <.05.
^e Chi square = 12.06, p <.01. ^f Chi square = 4.17, p <.05. ^g Chi square = 13.18, p <.01

In summary, while no significant differences were found between those who gave consent to access police records (N=843) and those who did not consent (N=297) on family socio-economic background and community/local area characteristics, those who did not consent were significantly more likely to be male, engage in antisocial behaviour, and have higher rates of contact with criminal justice agencies for offending (especially at 19-20 years), than those who gave consent.

Further comparisons using the entire ATP cohort showed that the group who gave consent tended to report slightly lower rates of antisocial behaviour, and had less contact with police and courts than the overall cohort. Nevertheless, it was clear that the consenting group included a considerable number of individuals who had engaged in antisocial behaviour, and who self-reported contact with police and courts for offending.

These findings have implications for the subsequent analyses undertaken, suggesting that the results obtained from the official records search may be conservative, and somewhat under-estimate the rates of offending for the ATP cohort as a whole.

Patterns and trends in police records

The information obtained from the official records search is next described. Of the 843 individuals who provided consent and whose police records were checked, a total of 241 (28.6 per cent) had a least one recorded offence. Significantly more males than females had been apprehended, according to the official records (36.6 per cent and 23.0 per cent, respectively)⁶⁷. Table 27 shows that two-thirds of these individuals had more than one offence recorded (N=151). As will be seen later, most multiple offences were traffic related offences. For those with an official record, the average number of offences was almost three per individual⁶⁸.

Number of offences recorded	Number of individuals
None	602
One	90
Two	61
Three	36
Four to twenty-five	54

Recorded offences were broadly classified into a) offences other than traffic offences, comprising *property/criminal damage* offences, *violent* offences, and *drug/other* criminal offences; and b) traffic offences, comprising *speeding* offences and *other* traffic offences. Of the 241 offenders, the majority (N=195; 80.9 per cent) had a record for traffic offences only, while very few had an official record for a property/criminal damage, violent, or drug offence (N=46).

Offences other than traffic offences

A total of 46 individuals (5.4 per cent) had one or more recorded property/criminal damage, violent, or drug offence, with rates almost twice as high among males than females (7.5 per cent and 4.0 per cent, respectively)⁶⁹. As Table 28 shows, most individuals had only one offence of this type recorded (N=34); however, a small number had two or more recorded offences (N=12; 26 per cent).

Number of criminal offences recorded	Number of individuals
None	797
One	34
Two	5
Three or more	7

The 33 different types of offences recorded were categorised into *property/criminal damage* (for example, shoplifting, handling/receiving stolen goods), *violent* (for example, assault), and *drug and/or other* offences (e.g possession of liquor as a minor, trespass, making a false report to police). Most of the 46 offenders had one or more property offence (N=28; 60.1 per cent), 7 individuals (10.9 per cent) had committed at least one violent offence, and 18 individuals had committed a drug-related or other type of offence (30.1 per cent). The age at which offences were committed ranged from 10 years (1993) to 21 years (2003), as shown in Figure 54. (Note that the total is greater than 46 because some individuals committed offences at multiple ages) As most participants were only just 21 years of age when the official records were accessed, the number of offences at 21 years is an under-estimate. The average age at which offenders were first recorded as committing an offence of this type was 16.5 years.

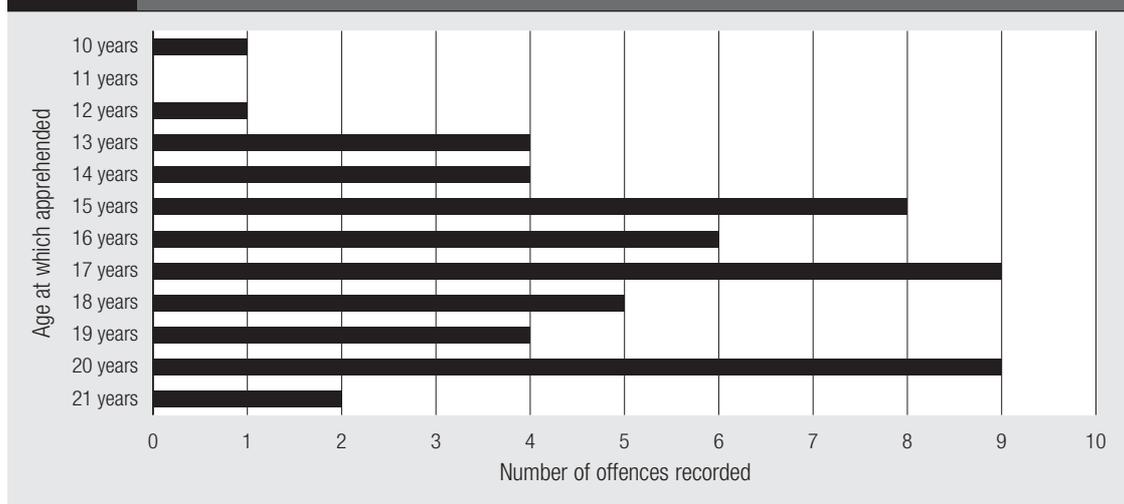
The police deal with those who are apprehended for offending in various ways. Offenders can be officially cautioned, issued with a summons to appear in court at a later date, or arrested (the most serious action by police in apprehending an offender). Most had received a caution from the police (N=35, 76 per cent), approximately 30 per cent (N=14) had been issued with a summons, while very few offenders had been arrested (N= 3).

67 Chi square = 18.54, $p < .01$.

68 It is important to note that multiple offences could have occurred on different occasions, but may also have arisen from a single incident. Thus, the number who offended on two or more separate occasions is less than 151.

69 Chi square = 4.74, $p < .05$.

Figure 54 Age at which individuals were apprehended for offending



Traffic offences

Of the 843 individuals who gave consent, one quarter (25.3 per cent) had at least one recorded traffic offence, such as disobeying traffic lights or signs, exceeding the speed limit, public transport offences (for example, not having a valid ticket) and parking infringements. For all types of traffic offences, significantly more males than females had been apprehended (34.0 and 20.2 per cent, respectively)⁷⁰. Of those who had been apprehended for a traffic offence, more than half were found to have done so on multiple occasions (Table 29).

Table 29 Number of individuals with traffic offences as indicated by official records

Number of traffic offences recorded	Number of individuals
None	623
One	79
Two	59
Three	35
Four or more	47

Turning now to the different types of traffic offences recorded (Table 30), approximately 22 per cent had one or more speeding violations, and approximately 13 per cent had been involved in another type of driving infringement (for example, failure to wear a seat belt, failure to obey traffic lights, unlicensed driving, changing lanes without giving way). Very few individuals had an official record for a parking or public transport infringement (under 2 per cent)⁷¹. Interestingly, more than half of those with speeding violations were repeat speeding offenders. In terms of sex differences, Table 30 shows that significantly more males than females had a speeding, or other, type of driving offence. There were no gender differences in rates of parking and public transport infringements.

Table 30 Number of speeding, other driving offences, parking and public transport offences recorded

Number of offences	Number of individuals			
	Speeding	Other driving offences	Parking	Public transport
None	662	733	826	827
One	99	75	15	7
Two	46	15	-	5
Three or more	36	20	2	4
Total number of individuals with offence	181	110	17	16
Proportion of males and females (%) with this offence	27.7 / 17.1 ^a	18.2 / 9.5 ^b	2.6 / 1.6	2.9 / 1.2

Notes: ^a Chi square = 14.11, p < .01. ^b Chi square = 14.36, p < .01.

⁷⁰ Chi square = 20.41, p < .01.

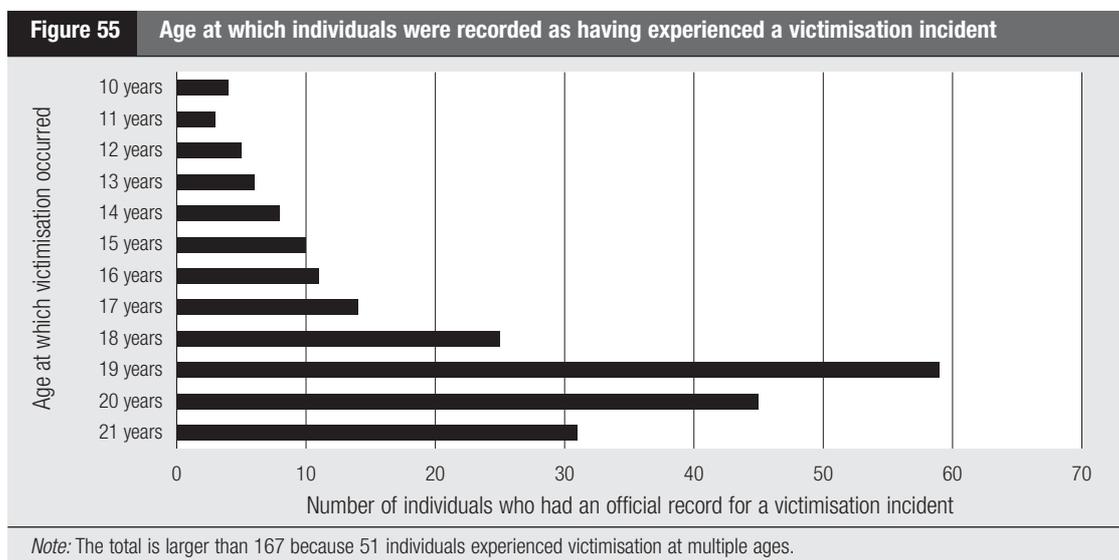
⁷¹ Rates of recorded parking offences are low because parking infringements that are paid prior to being registered with the Perin court are not recorded on the computer system. Thus, only those parking offences that proceeded were revealed by the official records search undertaken, and the rates reported here are likely to be a considerable under-estimate.

Description of officially recorded victimisation incidents

According to the official police records, 167 individuals (just under 20 per cent) of those who gave consent had an officially recorded victimisation incident. Most had been a victim of a property-related incident (N=144, approximately 17 per cent of the sample), with fewer (N=34, just under 4 per cent of the sample) had been involved in a violent/personal incident. A small number of victims had experienced both types of crime (N=11, approximately 1 per cent) of the sample. Few individuals had experienced more than one such incident (Table 31), and similar proportions of males and females were recorded as having been a victim of crime.

Number of victimisation incidents experienced	Number of individuals		
	Property	Violent/personal	Overall
None	699	809	676
One	105	28	116
Two	30	4	37
Three or more	9	2	14
Total number of individuals	144	34	167
Proportion of males and females (%)	17.8 / 17.4	5.1 / 4.5	19.9 / 19.7

The youngest age at which an individual was recorded as having been a victim of crime was 10 years (Figure 55). The number of individuals who experienced such incidents increased considerably over adolescence, peaking at 19 years of age⁷². The average age at which individuals were first recorded as experiencing a victimisation incident was just under 18 years.



In summary, almost 30 per cent of individuals who gave consent for the access of their police records had one or more recorded offences. Most offences were traffic related (81 per cent). Over all types of offences, significantly more males than females had an official record (36.6 per cent and 23.0 per cent, respectively).

A total of 46 individuals (5.4 per cent of the sample) appeared on police records for a property/criminal damage, violent or drug related offence. Almost two-thirds of these records were for property offences (60 per cent), 10 per cent were for violence, and 30 per cent were drug-related or another type of offence. The age at which offences were committed ranged from 10 to 21 years of age, with the average age at which these types of offences were first committed being 16.5 years.

One quarter of individuals (25.3 per cent) had one or more recorded traffic offences. The majority of these individuals had incurred multiple offences. Offences included acts such as disobeying traffic lights or signs, exceeding the speed limit, parking infringements, and public transport offences such as not having a valid ticket. Approximately 22 per cent had a speeding violation, and 13 per cent had been apprehended for another type of driving infringement.

Approximately 20 per cent of participants were recorded as having been a victim of crime. Most victimisation incidents were property-related (17 per cent). However, a small number (3 per cent) had been involved in a violent/personal incident. The youngest age at which an individual was recorded as having been a victim of crime was 10 years of age, and the average age at which individuals first experienced such an incident was just under 18 years of age.

72 As noted earlier, most participants were only just 21 years of age when the official records were accessed, so the rate of victimisation incidents at 21 years is an under-estimate.

Comparison of official records with self-reports (official records → self reports)

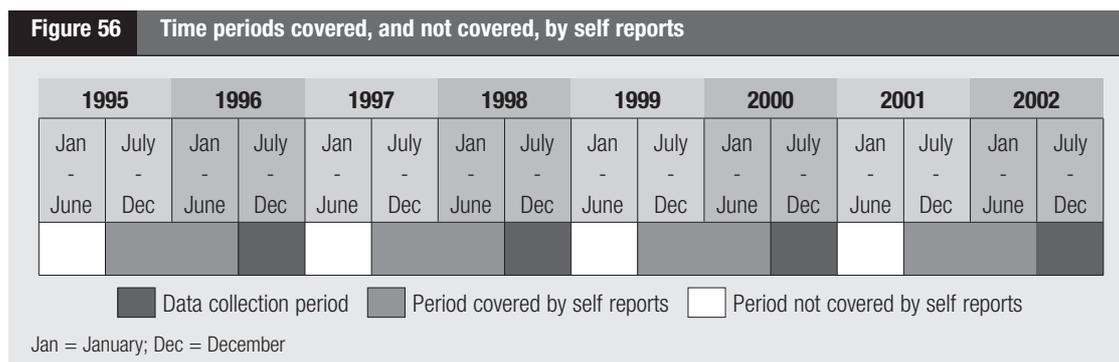
One way of comparing self reports and official records is to check whether those offences or victimisation incidents which appear on official records are also self reported. Thus, the extent of agreement between official records on the one hand, and self reports on the other, was investigated.

However, the comparisons are not straightforward, as there is a gap between the period covered by self report (which assessed acts committed within the previous 12 months) and the timing of the ATP data collections, which took place every two years. Some offences listed in official records were found to have occurred outside the self-report period.

Figure 56 shows the timing of the ATP data collections and the period covered by self reports. The dark shaded boxes show the period in which the data collection took place, the light shaded boxes show the 12 month period preceding the data collection during which self reported antisocial behaviour could have occurred, and the clear boxes show the period not covered by self reports at all. Thus the clear boxes depict the period in which there is no self report data to which official records data can be compared. As an example, the mid-adolescent ATP data collection took place from July to December in 1998. The survey instrument asked adolescents to report involvement in antisocial acts during the preceding 12 months. The twelve months reporting period preceding the data collection thus covered the time span from July 1997 to June 1998. The early adolescent ATP data collection wave took place from July to December in 1996. Hence, the period from January to June in 1997 was not covered by self reports from either data collection (as it was after the 1996 data collection and more than 12 months earlier than the reporting period specified in the 1998 data collection).

Therefore the next section uses only the officially recorded offences or incidents which occurred during, or within the 12 months prior to, the period of the self reports (the light and dark shaded boxes in Figure 60). Officially recorded offences which occurred outside these times (i.e. the clear boxes) were excluded from the analyses.

The agreement between official records and self reports of non-traffic offences, and/or contact with police or courts for offending,



are described first. This is followed by an examination of the agreement between official records and self reports for traffic offences, and finally the agreement between official records and self reports of contact with police regarding a victimisation incident.

Concordance between official records and self reports of property/criminal damage, violent or drug related offences, and contact with criminal justice agencies for these type of offences

Early adolescence (13 to 14 years of age; 1995-1996)

Eight individuals (1 male, 7 female) had both official records and self report data during the early-adolescent period. Official records indicated that all had been involved in a theft-related offence, most had a record for one offence only, and most had received an official caution from the police. According to their self-reports, seven of the eight self reported having stolen something in the past twelve months, suggesting there was a very high concordance between self reports and official records. Information was not sought during the 13-14 year old data collection about participants' contact with police and courts for offending. Thus the concordance between official records and self report on such contact cannot be assessed at this age.

Mid adolescence (15 to 16 years of age; 1997-1998)

Fifteen adolescents (8 males, 7 female) had an official record and also self reported offending during the time period covered by the mid-adolescent data collection. Twelve of the fifteen had a record for theft or property damage, and for the other three, offences were drug-related. In all but two cases, the self report data closely matched the type of offence on the official records (for example, "criminal damage" on the official record corresponded with "damaged something in a public place" on the self report; "theft from a shop" on the official record with "shoplifted" by self report). Similarly, when asked in the ATP survey whether they had been in contact with the police for offending, all but two of the adolescents who had an official record also self-reported that such contact had occurred, indicating a high rate of agreement between the two sources of data.

Late adolescence (17 to 18 years of age; 1999-2000)

Eleven adolescents (7 male, 4 female) had both an official record and self report data during the late-adolescent period. Most individuals had a record for a single offence. Five of the entries in the official records were for theft and property damage, five were drug related, and two were for violence. Similarly to the findings at younger ages, all but one individual had self-reported a similar offence during the ATP data collection (for example, “assault in company” on the official record and “physical fight” on the self report; “possession of cannabis” on the official record and “marijuana use” on the self report)). The majority of adolescents who had an official police record (73 per cent) also self reported that they had been in contact with police for offending.

Early adulthood (20 to 21 years of age; 2001-2002)

Six individuals appeared on official records in early adulthood and also had self report data (4 male, 2 female). The types of offences recorded were: theft (one instance), drug related (3 instances), violence-related (two instances) and behaving in an offensive manner in a public place (one instance). The majority had committed a single offence. As at previous time points, the degree of agreement with self report was high, with four of the six reporting engagement in the same type of act in the ATP survey, and the same proportion reporting apprehension by criminal justice agencies for offending.

Overall, these findings suggest a high degree of accuracy for self reports, as almost all offences recorded on official records had also been self reported.

Concordance between official records and self reports of traffic offences

At 19-20 years of age, individuals were asked to indicate how many times they had been apprehended for speeding and also if they had any contact with the police for a driving-related offence in the past year. According to the official records, 92 individuals (10.9 per cent of the ATP sample, 59.8 per cent of males and 40.2 per cent of females) were apprehended for speeding in the designated time period. Almost all of these individuals also self-reported that they had been caught speeding (96.7 per cent).

In regards to contact with the police for a driving related offence other than speeding (for example, disobeying a traffic signal or sign), 52 individuals (6.2 per cent of the sample, 57.7 per cent of males and 42.3 per cent of females) had an official record for such an offence during the self-report reference period (i.e., the 12 months before they filled in the questionnaire). Approximately 56 per cent of these individuals also self-reported that they had had contact with the police for a driving-related offence.

Concordance between official records and self reports of contact with police to report a victimisation incident

At 19-20 years, participants were asked if they had experienced a victimisation incident within the previous 12 months. This was the only time point at which such information was sought and hence where agreement could be investigated. While 168 individuals appeared on the official records as having been a victim of crime, most of the victimisation incidents were outside the time period covered by self report (i.e. they had occurred when participants were younger). A sub-group of 51 individuals had an officially recorded victimisation incident within the self-report period. The self-reports of most of these individuals (N=40, 78.4 per cent) also confirmed that they had been a victim of crime. Most had experienced one such incident. Table 32 shows the type of incidents that had occurred, and shows that agreement was highest when theft was involved. Neither of the two individuals who had an official record for a violent victimisation incident had self reported that they had been physically attacked.

Table 32	Comparison of official records and self reports concerning victimisation incidents	
	Official record of victimisation Appeared on official records as experiencing this offence	Self report of victimisation Reported to police
Physically attacked	2	0
Home burgled	3	2
Vehicle stolen	11	9
Contents of vehicle stolen	25	20
Something else stolen	11	8

In summary, most individuals who gave consent and had an official record for offending also self-reported engaging in this type of behaviour. Thus, high agreement was found when comparing official records of traffic and non-traffic offences with self reports. Over the differing types of offences, the average rate of agreement was 80.7 per cent. It was also notable that a similar proportion confirmed in their self reports that they had been apprehended by police for offending. Likewise, official records of victimisation incidents corresponded highly with self reports of such incidents, with an agreement rate of 78 per cent. However, it should be noted that overall, the number of individuals who appeared on official records was

quite low, and very few possessed a record for an offence other than a traffic offence. These data provide considerable support for the reliability self report, although more caution is needed regarding self reports of driving offences other than speeding, for which concordance between self reports and official records was somewhat lower at 56 per cent.

Comparison of self-reports with official records (self reports → official records)

A second way of comparing self reports and official records is to check how often self reports of a) property/criminal damage, violent or drug related offences and contact with the police for these type of offences, b) contact with police regarding a traffic offence, and c) contact with the police to report a victimisation incident, also appear on official records.

Agreement between self reports of property/criminal damage, violent or drug related offending and official records

Before investigating the overlap between self reports and official records regarding property/criminal damage, violent or drug related offences, a consolidation of the self report data was undertaken in order to summarise and simplify the large amount of data available. Thus, individuals who self reported engaging in at least one of the following illegal behaviours at a particular time point were classified as having offended at that time point:

- Attacking someone with the intent of seriously harming them
- Damaging something in a public place on purpose
- Stealing from a person or a house
- Shoplifting
- Graffiti drawing in a public place
- Carrying a weapon for example, a gun, knife
- Marijuana use
- Other illicit drug use (for example ecstasy, amphetamines, opiates)
- Selling illegal drugs

Approximately 20 per cent of 13-14 year olds, 33 per cent of 15-16 year olds, 32 per cent of 17-18 year olds and 41 per cent of 19-20 year olds self-reported offending. The next step was to check whether these individuals had an official record for a criminal offence within the relevant time period. As Table 33 shows, very few (less than one per cent) of those who self reported involvement in criminal behaviour had an official record for such behaviour during the time period covered by self reports. However, it should be recalled that the majority of self reported offences were relatively minor, and more serious types of offending were reported only rarely. Thus, high agreement between self report and official records would not necessarily be expected.

Table 33		
Number of individuals who self reported offending and who also had an official record for a property/criminal damage, violent or drug related offence during the same time period		
Age	Number who self-reported offending	Number who self reported offending and had an official record of an offence during this time period
13-14	171	8
15-16	276	15
17-18	274	11
19-20	343	6

Table 34 shows the number of individuals who self reported that they had been in contact with police or courts for a property/criminal damage, violent or drug related offence and the proportion of these individuals who also appeared on official records for offending during the designated time period. As can be seen, very few of those who reported that they had had contact with police, or received a police caution, were recorded officially. Likewise, only a minority of the individuals who self reported more serious types of criminal justice contacts (such as being charged, or appearing in court as an offender) had a corresponding official record.

In general, concordance was much lower for reports of charges than for reports of court appearances. From 40 per cent to two thirds of individuals who reported the latter two types of criminal justice contact appeared on official records (see Table 34). The lower rate of agreement found regarding charges could reflect a misinterpretation by respondents on the nature of the police action taken; for example, an informal warning could have been taken as being charged with an offence. It should also be noted that a small number who self reported contact with police or courts for offending were found to have an official record earlier than and thus outside of the time period covered by self reports, perhaps suggesting that some self reports of

contact with police and courts may have been inaccurate in terms of the timing of the contact. These cases are listed below Table 34 and were excluded from the analyses reported in Table 34. However, even if these cases were included, the frequency of self reported offending was markedly higher than the frequency of offending revealed by official records.

Table 34		Number of individuals who self reported contact with police or courts for offending and the number who appear on official records for offending during the same time period	
Age	Type of criminal justice contact	Self report	Official record
		Number who self report contact with police and/or courts for offending	Number of these individuals who appeared on official records for a criminal offence around this time point
15-16	Contact with/cautioned by police for offending	95	10 ¹
	Charged by police	7	1
	Appeared in court as an offender	2	1
17-18	Contact with/cautioned by police for offending	86	9 ²
	Charged by police	19	7 ³
	Appeared in court as an offender	3	2
	Been convicted in court of a criminal offence	2	1
19-20	Contact with police for offending	36	3 ⁴
	Charged by police	31	3 ⁵
	Appeared in court as an offender	12	5
	Been convicted in court of a criminal offence	10	4

Notes: ¹ Two appear on record slightly before the self-report reference period. ² One appears on record before the self-report reference period. ³ One appears on record before the self-report reference period. ⁴ Two appear on record before the self-report reference period. ⁵ Four appear on record before the self-report reference period.

Agreement between self reported contact with police and courts for traffic offences and official records

Approximately 25 per cent (208 individuals) self reported at 19-20 years that they had been apprehended by police for exceeding the speed limit in the past 12 months. Just under half of these individuals (N=88, 42 per cent) appeared on the official records for speeding in the designated time period. Similarly, 169 individuals (20 per cent) reported that they had had contact with the police for a driving-related offence⁷³ in the previous 12 months. Approximately one third of these (N=62, 36.7 per cent) appeared in the official records for committing a traffic offence (i.e. speeding and/or other type of offence).

Agreement between self reports of contact with police regarding a victimisation incident and official records

A minority of those who self reported contacting police to report a victimisation incident had this recorded (Table 35). Instances of theft, particularly involving home burglary or a motor vehicle, were much more likely to be found on official records than incidents of violence or threats of violence. The highest rate of agreement was 65 per cent (for theft of a motor vehicle), and the lowest rate of agreement was 7 per cent (for threats of physical attacks).

Table 35		Numbers of individuals who self reported contacting police regarding a victimisation incident and the number who appear on official records regarding the incident	
Type of Incident	Self report	Official record	
	Number who said they reported a victimisation incident to police	Number of these individuals who were recorded as experiencing a victimisation incident	
Been physically attacked	13	2	
Been threatened with physical attack	14	1	
Had home burgled	12 ¹	2 ¹	
Had vehicle stolen	23	15	
Had contents of vehicle stolen	65	38	
Had something else stolen	42	16	

Note: ¹ Only individuals residing away from the parental home are included here, as it was not possible to check whether official records existed for participants living at home whose parents may have reported the burglary to police.

⁷³ this contact could have involved speeding

In summary, when comparing self reports to official records, low rates of agreement were found. Overall, concordance was lowest between self reports of property/damage, violent or drug offences and official records of these type of offences. Thus, self reports greatly outnumbered official records: from 20 to 40 per cent of individuals self reported engaging in the various types of behaviours studied, whereas official records of such behaviour existed for fewer than one per cent.

Very few who reported “contact” with police or receiving a caution for offending appeared on official records (this may be partly because young people misinterpreted police action). Rates of agreement between self reports of more serious contacts (such as being charged, or appearing in court) and official records were also relatively low, ranging from 10 to 67 per cent, with an average level of agreement of 38.6 per cent over all categories. While very few of those who self reported being charged by police had a corresponding official record, from two-fifths to two-thirds of those who self reported appearing in court as an offender had an official record of this. The concordance between self reports of apprehension for traffic offences and official records was moderate, with rates of agreement generally about 40 per cent.

Official records existed for a minority of individuals who self reported that they had contacted police to report a victimisation incident. The highest rate of agreement was 65 per cent (for theft of a motor vehicle), and the lowest rate of agreement was 7 per cent (for threats of physical attack). The average agreement rate overall was 33 per cent. Self reported incidents of theft, particularly home burglary or a motor vehicle, appeared more often on official records than incidents of violence or threats of violence.

Overall, the frequency of offences and victimisation incidents obtained via self reports was substantially higher than the frequency indicated by official records, indicating a high level of undetected and/or unrecorded illegal behaviour and victimisation incidents. However, the majority of self reported offences were relatively minor, and therefore the lack of agreement between self reports of offending and official records is to a certain extent expected. The low concordance concerning a court appearance, however, is unlikely to be due to recall error or misinterpretation of police action, and is puzzling.

Comparison of individuals who had an official record for offending and those identified by self report as persistently antisocial

The final issue addressed is the question of whether certain types of individuals are over-represented in official records. To investigate this issue, the profile of the sub-group of individuals who had an official record for a criminal offence was compared to the profile of two sub-groups of individuals who self reported engaging in *persistent adolescent antisocial* behaviour⁷⁴.

Table 36 shows the profiles of three groups: a) the sub-group who had an official record for a criminal offence, b) the sub-group who were identified by self report as *persistently antisocial* during adolescence who also gave consent for the police

Table 36 Comparison of demographic characteristics of the sub-group who had an official record for a criminal offence, the <i>persistently antisocial</i> sub-group who provided consent for a police records search, and the total <i>persistently antisocial</i> group			
Demographic characteristic	Sub-group with an official record (N = 46)	Persistent adolescent antisocial sub-group who consented (N = 54)	Total Persistent adolescent antisocial sub-group (N=130)
Sex (male)	55.6	59.3	66.2
Low socio-economic status	24.4	23.5	22.9
Location			
Metropolitan	68.9	64.3	59.7
Regional	15.6	23.2	23.4
Rural	15.6	12.5	16.9
Local Area Characteristics			
High unemployment	11.1	23.2	22.1
High crime	42.2	41.1	36.4
Low income	15.6	12.5	11.7
High growth	17.8	17.9	16.9
High lone-parents	37.8	28.6	27.3
High disadvantage	13.3	21.4	18.2
Low economic resources	20.0	10.7	14.3
Low education and occupation	8.9	12.5	13.0

74 see page 10 and Vassallo et al. (2002). In brief, these individuals had engaged in high levels of antisocial behaviour (involvement in three or more different types of antisocial acts during the previous 12 months) at several time points from 13 to 18 years of age, including the last time point.

records search, and c) the entire *persistently antisocial* group (including those who did not give permission for the police records search)⁷⁵ on socio-demographic characteristics.

As can be seen, the profiles of the three groups were quite similar. No significant group differences between the sub-group with official records for offending and either the *persistently antisocial* sub-group who gave consent or the total *persistently antisocial* group were found on any characteristic. There were some trends for differences (for example, more males among the total *persistently antisocial* group, fewer of the official records group resided in a regional location, more of the official records group lived in an area with a high proportion of lone parent families). However none of these trends reached statistical significance.

In summary, the groups identified by official records as offenders and by self reports as *persistently antisocial* were relatively similar on characteristics such as gender; family socio-economic background; proportion who lived in metropolitan, regional or rural locations; and their local area characteristics (for example, high unemployment, low economic resources, high crime). Thus, no significant group differences were found on these characteristics. However, it should be noted that the groups compared were relatively small, resulting in diminished power to detect group differences. Overall, then, it did not seem that the individuals who self reported engaging in antisocial behaviour tended to differ significantly from those who had an official record in terms of their socio-demographic characteristics.

Conclusions and implications

Three issues were investigated in this section:

- a) the agreement between two sources of information (official records and self reports) concerning property/criminal damage, violent or drug related offences, traffic offences, and contact with police and courts for offending. Two types of analyses were undertaken; firstly, whether the offences which appear on official records were also self reported (official records → self reports), and secondly, whether the information provided by self report was reflected in official records (self reports → official records);
- b) the agreement between the two sources of information on victimisation incidents, using the same methodology (from official records to self report, and from self report to official records); and
- c) similarities between the group of offenders identified by official records and the group of *persistently antisocial* adolescents identified by self reports.

Except for question c), the analyses were restricted to those who gave permission for access to official records (74 per cent of those who participated in the 13th data collection wave), who tended to have less frequently engaged in adolescent antisocial behaviour. When official records were compared to self reports, rates of agreement were generally substantial, with an average agreement rate of 80.7 per cent. Similar rates of agreement were found when comparing official records to self reports of contact with police and courts for offending. However, when self reports were compared to official records, rates of agreement were low, with generally a minority of those who self reported offending appearing on official records, and the majority having no records. Similarly, generally a minority of those who reported contact with police or courts for offending had an official record of contact, although for more serious types of contact (for example, a court appearance for offending), agreement was somewhat higher.

Likewise, regarding victimisation incidents, when official records were compared to self report, an agreement rate of 78 per cent was found. However, the agreement rate was only 33 per cent when self reports were compared to official records.

Overall, the socio-demographic profiles of individuals who appeared on official records for a criminal offence and those identified by self report as *persistently antisocial* during adolescence were similar. Although there were trends for some differences, these did not reach statistical significance.

Some implications arising from these findings are now presented.

Not all individuals gave consent for the official records search

Before discussing the implications of these findings, it is important to recall that official records were obtained for a sub-sample (74 per cent of those who participated in the 19-20, Year 2002 data collection wave), rather than the total ATP cohort. As noted

⁷⁵ To allow for an accurate interpretation of the data, it was necessary to examine both the *persistently antisocial* sub-group of individuals who gave consent and the whole *persistently antisocial* group (including those who refused consent). It was felt important to include both types of *persistently antisocial* groups. The *persistently antisocial* sub-group who also provided consent allows a more equitable comparison to the official records sub-group, which had been limited to the pool of ATP participants who provided consent. As demonstrated earlier, this group had engaged in antisocial behaviour less often than the total ATP cohort. Thus the official records sub-group was a smaller, select group than would have been obtained if an official records search had been conducted of the total ATP cohort. It was clearly also important to assess the profile of the entire *persistently antisocial* group as identified by self report to gain a comprehensive picture of their group profile. Therefore, both *persistently antisocial* groups were included in the analyses. Both *persistently antisocial* groups contained individuals who had, and did not have, an official record.

earlier, while there were no differences between those who consented, and those who did not, on family socio-economic background and community/local area characteristics, the group who consented had less frequently engaged in adolescent antisocial behaviour and contained fewer males. However, this sub-group still included a considerable number of individuals who had engaged in antisocial behaviour, and who self-reported contact with police or courts for offending. One likely outcome of the absence of some police records is that the results obtained from the official records search may be conservative, and slightly under-estimate the rates of offending officially recorded for the ATP cohort. Since more of those who did not provide consent self reported engagement in antisocial behaviour, it is also possible that the rates of agreement between self reports and official records may have been higher if these individuals had been included in the police records search, and a greater diversity and severity of offending may have been found.

Most individuals with an official record also self reported the behaviour or incident

The findings provide encouraging support for the validity of self report data and the honesty with which the study participants responded. The great majority of individuals who had an official record for offending also self reported engaging in the behaviour in question. In many cases, the self reported offending behaviour preceded the official records search by several years (therefore self report responses could not have been made with the aim of being consistent with official records). Similarly, most individuals with an official record also self reported that they had been in contact with police or courts for offending. These findings are consistent with those of Jolliffe, Farrington, Hawkins, Catalano, Hill and Kosterman (2003), and support Huizinga and Elliott's (1986) conclusion that most individuals who appear on official records confirm this in their self-reports. Additionally, the present study found that official records concerning victimisation incidents were matched quite closely by the self report data, with almost four-fifths of individuals who had a record for such an incident in the designated time span self reporting that they had contacted police regarding the incident. The rates of agreement were similar between official records and self reports for both offending and victimisation, suggesting that self reports of involvement in antisocial activities tended to be relatively truthful.

Thus, these findings suggest that adolescent self reports of antisocial behaviour tend to be relatively accurate and reliable. There was little support for the notion that individuals deny involvement in antisocial behaviour when surveyed, at least in this particular study. The high concordance may have been bolstered by the very good relationships developed between the research team and the study's participants. A high degree of trust has been established over the years of the project, which is perhaps also reflected by the high rate of consent of 74 per cent for the official records search to be undertaken in the first place.

Many individuals who self reported offending, or contact with criminal justice agencies, did not have an official record

Relatively few of those who self reported offending had an official record. Generally, official records were found for only a minority who self reported offending. These findings accord with those of other studies in showing that much criminal behaviour does not appear in official records (for example, Maguire 2002). There are at least two reasons why self reported offending may not have been recorded: the offences may not have been detected; and the offences may have been detected but not recorded by police for a range of reasons. Thus, it is not possible to estimate how much crime goes undetected from the current data.

Agreement rates regarding contact with police or courts for offending were similar, with many self reports of contact not appearing on official records. This was most marked for reports of 'contact' or cautioning for offending but there was also a lack of concordance for more serious types of contact, such as being charged or appearing in court as an offender. These findings also are consistent with those of others, for example Maxfield et al. (2001), who found that 21 per cent of respondents who reported having been arrested had no official history of arrest.

Agreement between self reports and official records was also relatively low for victimisation incidents. It was hypothesised that agreement might be higher for these types of events, as there may be fewer reasons for individuals to fail to self report police contact regarding victimisation incidents, and such incidents may necessitate further official investigation and more detailed record keeping. However, while there was somewhat higher concordance between self reports and official records of victimisation incidents than for criminal offences, the rate of agreement remained relatively low over all types of comparisons. These findings are also consistent with those of other researchers, for example Mayhew, Mirless-Black and Aye-Maung (1994), who reported that approximately 40 per cent of victimisation incidents reported to police are not recorded on official records.

A variety of factors may underlie the relatively low agreement found when comparing self reports to official records. Firstly, as noted earlier, many offences, particularly minor ones, are undetected. Secondly, many offences are too minor or trivial to be recorded and even when detected may be dealt with unofficially. Thirdly, official record keeping may be imperfect. Finally, a number of factors may limit the accuracy of each source of information.

Issues which affect the accuracy of official records could include a reluctance on the part of police to initiate an official record for an adolescent offender. The existence of official records can be stigmatising and may carry serious implications, for example, restricted employment opportunities. Thus, police may exercise particular care when considering whether to create an official record for a young offender. Additionally, the competing priorities and heavy workloads carried by police may make thorough record keeping a difficult task. It may also not be appropriate or even desirable for all offences to be officially recorded, no matter how minor or trivial. Lastly, the evidence available may be insufficient to justify preparing an official record.

Issues which may reduce the accuracy of self report could include an exaggeration of involvement in antisocial activities, or a misunderstanding of the nature of contact with police or misinterpretation of police actions (for example, the report of a caution when an unofficial warning had been given). Another source of inaccuracy could be a misinterpretation of the survey question itself (for example, an informal recounting of an incident to a police officer may be construed and reported as a formal report to police). With regard to self reports of offending, the self report measures required participants to report behaviours which occurred during the previous twelve months. It may have been difficult for participants to recall precisely when some activities took place, and respondents may have included behaviours which occurred outside the designated time frame, resulting in some over-reporting.

Thus, there are a number of reasons why the frequency of offences obtained via self reports was considerably higher than the frequency indicated by official records. It should also be noted that the discrepancy found here mirrors the findings of other studies which have investigated this issue (Coleman and Moynihan 1996).

Offenders identified by official records were very similar to offenders identified by self report

The socio-demographic profile of offenders as indicated by self reports and by official records were similar, with no significant differences found on any of the aspects investigated. These included the proportion of males versus female offenders; family socio-economic background; residence in a metropolitan, regional or rural location; and characteristics of the local area in which offenders lived (for example, high unemployment, low economic resources, high crime). Thus, these findings do not support the view that the characteristics of offenders identified by official records are unrepresentative or atypical, i.e. there was no evidence of over-representation of some groups in official records. However, as noted earlier, some of the groups compared were small, which may have reduced the power to detect statistical differences. Additionally, other aspects that may bring individuals to police attention, such as country of birth, ethnic background, appearance, demeanour, were not able to be investigated due to the small group sizes, or a lack of this type of information.

Limitations

A number of considerations need to be borne in mind in interpreting the comparison of official records and self reports undertaken here. Firstly, the official records search was undertaken for the sub-sample of the ATP cohort who provided consent for the search, rather than the total cohort. This sub-sample tended to be somewhat less antisocial than the cohort overall, so that the range and completeness of information about the official records of the ATP cohort is somewhat restricted. As a smaller sample was employed, the number of individuals included in some analyses was sometimes low, which may have impacted on the reliability of trends.

Possible limitations in the search process itself should also be considered. It should be noted that a second search was undertaken as a check on the reliability of the search process. In some cases, the information provided for the search - full name, birth date, current and previous postal addresses - may not have been sufficiently detailed to positively identify individuals. Additionally, the details held on official records may slightly differ from the ATP study details, limiting the possible matches. For example, Geerken (1994) has shown that some offenders subtly misreport personal details (for example, minor name or address variations) when apprehended, thereby reducing the possibilities of data matching.

Finally, for a handful of cases, the process of matching the official records and self reports was not exact. Although the overall time frame during which participants completed surveys was known, the exact date was not. Hence, some official records entries could clearly be judged to have occurred within the previous 12 months, whereas other entries were highly probable to be a match rather than certain, and others were clearly outside the self report period and were thus not included in the analyses. While these limitations may have reduced the accuracy of the data matching, it is not likely that they fully account for the substantial discrepancies found between self reports and official records.

In conclusion, the comparison of official records and self reports undertaken here provided reassuring support for the validity of self reports, as there was very high agreement when official records were compared to self reports. However, when self reports were compared to official records, much higher levels of offending, contact with police or courts for offending, and reporting of a victimisation incident to police were revealed by self reports than by official records. It was noted that both sets of findings are consistent with other research into this issue, and several explanations for these findings were offered.

The group identified by official records as offenders was similar to groups identified as *persistently antisocial* on characteristics such as gender ratio, family socio-economic background, and local area characteristics, indicating that there was no evidence of over-representation in the type of individuals identified by official records. While some limitations to the study which might affect the reliability of the findings were noted, these were not deemed likely to account for the clear trends found. One implication of these findings is that crime prevention efforts should not be limited only to adolescents identified by official records, as they will exclude many who may benefit from such programs. Furthermore, self reports may provide a useful adjunct to official records in augmenting information about the frequency of offending.



Conclusions

Conclusions

In conclusion, the findings of this Third Report build upon the first two Reports to significantly enhance our understanding of the development of antisocial behaviour among a community sample of young Victorians. It should be recalled at the outset, however, that while occasional, limited engagement in antisocial behaviour was relatively common, only a minority of young people (never more than 20 per cent) were found to be involved in high levels or persistent antisocial behaviour. Nevertheless, while antisocial behaviour may be a problem for a minority of young people, the costs to the individual, his/her family, community and society can be large. Moreover, long-term harms can ensue.

This Third Report investigated six distinct issues:

- a) the continuity of antisocial behaviour into early adulthood;
- b) connections between antisocial behaviour and victimisation;
- c) the role of adolescent substance use in the development of adolescent antisocial behaviour;
- d) pathways to adolescent antisocial behaviour among low-risk children;
- e) relationships between motivations to comply with the law, attitudes, antisocial behaviour; and
- f) concordance between self reports and official records.

First, the progress in early adulthood of individuals with differing patterns of adolescent antisocial behaviour was investigated. A majority of young people who had persistently engaged in antisocial behaviour during adolescence continued to engage in such behaviour at 19-20 years (57 of the 104 individuals). No factors could be identified which might have facilitated desistance from such behaviour. Additionally, a *late onset* group (N=68), who began to engage in antisocial behaviour for the first time in late adolescence, or early adulthood, was found. The *late onset* pattern of antisocial behaviour did not appear to be associated with a more difficult transition to adult life (for example, an unsettled educational or occupational history), but coincided with the development of friendships with other antisocial young people, psychosocial adjustment problems, substance use, and difficulties in relationships with parents and friends. The group who had engaged in *persistent antisocial* behaviour during adolescence continued to experience the adjustment and interpersonal difficulties which had been evident previously, highlighting the long-term negative consequences associated with such behaviour. On the other hand, young people who did not engage in antisocial behaviour during adolescence, or who experimented in such behaviour in early adolescence and then desisted, were found to be progressing well in early adulthood.

Second, relatively high rates of victimisation were reported by this group of 19-20 year old Victorians (31 per cent overall; 36 per cent of males and 28 per cent of females). Incidents involving violence (physical attack or threatened with violence) were associated with higher rates of mental health difficulties, with those experiencing these types of incidents displaying higher levels of anxiety and depression. Antisocial behaviour was found to be a strong risk factor for victimisation, with links particularly evident between violent antisocial behaviour and violent victimisation incidents. Lifestyle factors and particular social contexts appeared to increase the risk of victimisation. The implications for crime prevention were highlighted, especially the potential flow-on effects of efforts to prevent or mitigate antisocial behaviour for also reducing the occurrence of victimisation incidents.

Third, adolescent substance use and antisocial behaviour were found to be powerfully related. At all time points, rates of licit and illicit substance use were higher among *highly antisocial* than *low/non antisocial* adolescents, and fewer reported non-use. By 17-18 years, the majority of *highly antisocial* adolescents engaged in almost all the types of substance use measured. Furthermore, over all time points and across all substances, levels of use were higher among *highly antisocial* adolescents: more reported moderate and high levels of substance use than did *low/non antisocial* adolescents. Individuals who engaged in *persistent antisocial* behaviour from early to late adolescence had the highest rates of all types of substance use, followed by those who engaged in *experimental antisocial* behaviour, while adolescents who did not engage in antisocial behaviour had the lowest rates of substance use. Examination of across-time connections between substance use and antisocial behaviour revealed strong bi-directional pathways between these two types of behaviour (i.e. substance use → antisocial behaviour, and antisocial behaviour → substance use). Peers' levels of involvement in antisocial behaviour and/or substance use were also closely linked to adolescents' own engagement in such behaviours. The strong association between antisocial behaviour and substance use serves as a reminder that antisocial adolescents frequently exhibit psychosocial difficulties in other life domains.

Fourth, the development of *persistent adolescent antisocial* behaviour among a small sub-group of children (N=42) who had not appeared to be at risk for such behaviour was investigated. During the early secondary school years, the *low risk antisocial* sub-group was notably more involved with antisocial peers and less attached to school, and began to display more difficult traits and behaviours and lower social skills. These characteristics continued to be evident in early adulthood. Furthermore, the *low risk antisocial* sub-group tended to engage in antisocial behaviour in early adulthood as frequently as the larger *high risk antisocial* sub-group. These findings suggest that while the pathway to *persistent antisocial* behaviour which began in early adolescence may be less common than the pathway which began in early childhood, the long-term outcomes for individuals traversing these separate pathways may be relatively similar.

Fifth, motivations to comply with the law, and attitudes towards police and courts were investigated. Two types of motivations were compared: beliefs about the likelihood of apprehension if an offence is committed, and pro-social, civically minded attitudes and values. Perceptions of the risk of apprehension were more powerfully associated with involvement in antisocial behaviour than the aspects of civic mindedness measured. Most young adults were found to hold positive attitudes toward the police and courts. However, a sizeable minority, particularly those who were involved in antisocial behaviour or who had contact with police or courts for offending, held less positive attitudes.

Finally, the concordance between self reports of offending, or contact with police for offending, and official police records was examined. Additionally, the agreement between official records of victimisation and self reports of contact with police to report the occurrence of victimisation was investigated. Also examined was the similarity between the profile of individuals who had an official record for offending and the profile of those who self reported *persistent adolescent antisocial* behaviour. The great majority of individuals with an official record for offending also self-reported engaging in the behaviour in question. Similarly, official records concerning victimisation corresponded very highly with self reports of such incidents. However, much self-reported offending, or contact with police for offending or to report a victimisation incident, did not have a corresponding official record. Both sets of findings are consistent with other research into this issue. The group identified by official records as offenders was similar to the *persistently adolescent antisocial* group on characteristics such as gender ratio, family socio-economic background, and local area characteristics. Some limitations which may have affected the reliability of the findings were noted.

Many of the implications which may be drawn from these findings have been discussed in earlier sections. In this final section, several important implications emerging from the findings of all three Reports are highlighted.

The diversity of pathways to antisocial behaviour

Consistent with other research (for example, Farrington and Hawkins 1991; Fergusson and Horwood 2002; Loeber and Stouthamer-Loeber 1998; Moffitt et al. 2001), this study has revealed a number of pathways to antisocial behaviour. Pathways commencing in early childhood, early adolescence and early adulthood were identified. While future data collections are required to confirm the continuity of antisocial behaviour in the long-term, there appear to be few differences in the early adulthood outcomes of individuals traversing these separate pathways, regardless of the age of onset. Nevertheless, somewhat differing clusters of risk factors were identified for the differing pathways. For example, individual characteristics such as a “difficult” temperament style, aggressiveness, and lower social skills were more central to the pathway which commenced in early childhood than to the two other pathways. Social factors, such as antisocial peer affiliations, a more difficult parent-child relationship, and greater disaffection with school were important features of all types of pathways. Overall, the pathway commencing in early childhood appeared to be the most common route to antisocial behaviour, with fewer individuals traversing pathways which began in early adolescence and early adulthood. The diversity of pathways found implies that explanations of antisocial behaviour will need to be multifaceted and complex, and that single or simple solutions should not be expected.

Another clear conclusion emerging from the findings is the capacity for change in pathways, both for the better and for the worse. Considerable flexibility in developmental pathways was demonstrated; firstly among high risk children who were resilient to the development of antisocial behaviour; secondly among low risk children who subsequently engaged in persistent adolescent antisocial behaviour; and thirdly among young adults who at this relatively late stage became involved in antisocial behaviour for the first time. These findings provide support for Loeber and Farrington’s (2000) assertion that it is “never too early, never too late” to intervene in pathways to antisocial behaviour. Several important transition points, or crossroads, were also identified that coincided with periods when major life changes were occurring, such as the commencement of primary school, the transition to secondary school, and the period following the completion of secondary school. These transition points may provide particularly promising opportunities for interventions, when individuals are especially amenable to change.

Furthermore, the findings suggest that multi-faceted intervention and prevention efforts will be required. A range of personal, family, peer and school characteristics were found to encourage or inhibit the development of antisocial behaviour, suggesting that intervention and prevention efforts will need to be broadly based to have maximum effectiveness. Nor will targeting one particular age be enough. While the most common pathway to antisocial behaviour was found to commence in early to mid

childhood, suggesting that efforts should be particularly directed at this stage of development, it will not be sufficient to focus exclusively on this age period. Further efforts to prevent or mitigate antisocial behaviour will be required in late childhood, early adolescence and late adolescence to assist individuals who begin to encounter difficulties at these later ages.

The co-occurrence of problem behaviours

Antisocial behaviour was found to very frequently co-occur with other types of problematic behaviour. Most persistently antisocial adolescents, for example, also engaged more frequently and more heavily in licit and illicit substance use than other members of the ATP sample. Moreover, engagement in one of these behaviours (i.e. antisocial behaviour or substance use) was found to increase subsequent engagement in the other type of behaviour. Likewise, antisocial individuals more frequently experienced victimisation in early adulthood than non-antisocial individuals, while in other research undertaken by the ATP team, antisocial behaviour, both concurrently and during adolescence, was found to be a powerful risk factor for risky driving behaviour in early adulthood (Smart and Vassallo, Sanson, Cockfield, Harris, Harrison, McIntyre 2005). Thus, antisocial behaviour was strongly associated with other risky or problematic behaviours. These findings are consistent with those of other studies (for example, Loeber, Farrington, Stouthamer-Loeber and Van Kammen 1998), and are, to a certain extent, supportive of Problem Behaviour theory (Jessor and Jessor 1977).

According to Problem Behaviour theory, many problem behaviours (such as antisocial behaviour, substance use, other risk-taking behaviours) are related to each other, and may be caused by a common underlying trait or propensity for problem behaviour. Thus, it is argued that specific problem behaviours such as antisocial behaviour should not be viewed as isolated problems, but rather as manifestations of a broader problem behaviour syndrome (Cretenden and Drummond 1994; Jessor and Jessor 1977; Newcomb and McGee 1991; Williams 1998). The theory thus shifts the focus from preventing specific problem behaviours to intervening in the development of problem individuals.

Given the high levels of co-occurrence of problem behaviours found in the present study, one likely consequence is that strategies aimed at preventing the development of antisocial behaviour may have a wider than anticipated impact, preventing or ameliorating the development of other problem behaviours. Similarly, prevention and early intervention efforts aimed at other types of problem behaviours may impact on the development of antisocial behaviour. At present, prevention and intervention strategies aim to target a single problem and tend to operate in isolation. There is exciting potential for more broad-based, collaborative efforts and for a cross-fertilisation in strategies.

The co-occurrence of antisocial behaviour with other problem behaviours was not universal. These findings highlight the variability that exists among young people who engage in antisocial behaviour. Thus, some adolescents will display multiple problem behaviours, others will not. Integrated, multi-modal interventions would seem to be particularly crucial in efforts to assist youth who exhibit multiple types of problem behaviours. Differing intervention strategies may be needed to cater for multi-problem and single-problem youth. Our understanding of the development of single problem and multiple problem pathways remains limited, despite recent valuable work on this issue (for example, Loeber et al. 1998).

Intervention implications

Risk-focused intervention and prevention strategies are frequently advocated and employed. While supportive of these approaches, the current findings also suggest several qualifications and extensions. The emergence of “high risk” resilient and “low risk” persistently antisocial sub-groups was a reminder that to be “high risk” merely increases the likelihood (not inevitability) of a particular outcome, while to be “low risk” decreases the likelihood of an adverse outcome but is not a guarantee of a positive one. Furthermore, as demonstrated in the investigation of violent and non-violent antisocial behaviour (in the Second Report, Smart et al. 2003), single risk factors, by themselves, were rarely powerfully predictive of problematic outcomes. For example, most single risk factors were characteristic of only a minority of problematic individuals (for example, 45 per cent of individuals who engaged in both violent and non-violent antisocial behaviour grew up in a disadvantaged family environment). A cumulation of risk factors, however, has been shown to be important (for example, Bond et al. 2000; Loeber and Farrington 2000). Thus, interventions targeting several risk factors have been found to be more effective than those which target a single risk factor (Wasserman and Miller 1998).

Risk factors may contribute to problematic outcomes directly, or indirectly. Farrington (2000) points to the importance of determining which risk factors are causal, and which are simply indicators or correlates of causal factors. Interventions that target indicators rather than causes are likely to be ineffective in reducing offending. At the present time, it remains difficult to identify the risk factors which exert a direct impact, particularly since many risks co-occur. Yet strategies targeting high risk individuals rely heavily on the accuracy of such screening factors (Coid 2003). Coid (2003) also points to the stigmatisation that may occur when identifying high risk individuals, which may become a self fulfilling prophecy. He asks “how will a family react when informed that their ten year old son has a one in three chance of becoming a psychopath in adulthood?” (pp. 54). The same may be asked of others in the child’s environment, such as his/her teachers, peers and neighbours.

The current findings have clearly shown that the environmental contexts in which children's development takes place, particularly the family, peer and school contexts, were powerful influences on the development of antisocial behaviour. For "high risk" resilient children, these environments appeared to provide a buffering or protective influence, which assisted them to move onto more positive developmental pathways. For "low risk" persistently antisocial adolescents, however, less optimal environmental influences (particularly antisocial peer affiliations) may have been instrumental in diverting adolescents from a positive pathway. Environmental characteristics may be more amenable to change than some of the intrinsic, individual characteristics found to be risk factors for antisocial behaviour. Moreover, high risk environments would be expected to contain a high proportion of individuals with an accumulation of risk factors.

Thus, the findings from this study could be seen as providing support for intervention efforts that are targeted at risky contexts, rather than at high risk individuals. Such strategies can be presented positively, as promoting community strengthening and facilitating positive developmental outcomes, avoiding the negative and stigmatising overtones of risk focused approaches. However, more targeted, follow-up approaches for children exhibiting clear signs of problems will also always be needed. Overall, the findings from this study suggest that a mix of community-based and more individualised approaches may provide the most effective means of preventing or ameliorating the development of antisocial behaviour.

This Third Report marks the culmination of the very productive collaboration between the Australian Institute of Family Studies and Crime Prevention Victoria. It is hoped that the findings contained in these three reports, which offer data from a unique study of Victorian children and families, will contribute to the evidence base to guide policy making and interventions aimed at preventing the development of antisocial behaviour in young Australians. However, a number of issues remain unresolved and there is a clear need for continuing research into the development and continuation of adolescent antisocial behaviour. It is hoped that the findings from this collaborative project will provide an impetus for future research and will help bring together research, policy and practice.



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