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## The Australian Temperament Project

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The Australian Temperament Project (ATP) is a longitudinal study following the psychosocial development of a large group of children from infancy to adulthood (for a more detailed account see Prior et al. 2000). Broadly, the project aims to investigate the contribution of personal, familial and environmental factors to an individual's adjustment and wellbeing.

Commencing in 1983 at a child age of four to eight months, a representative sample of 2,443 infants and their families living in urban and rural areas of Victoria was recruited via the following process. First, following advice from the Australian Bureau of Statistics, a sub-set of Victorian local government areas was selected, which was representative of the State's population in terms of parental occupational and educational levels and ethnic background. Second, all families with an infant aged between four and eight months who visited their local Infant Welfare Centre in the selected local government areas during the first two weeks in May 1983 were invited to take part in the project. At that time, the Infant Welfare Centres (now called Maternal and Child Health Centres) made contact with 94 per cent of live births, and the service was very widely used. Finally, comparison of the characteristics of the recruited cohort to census data showed that the cohort was representative of the State's population.

In all, 13 waves of data have been collected over the first 20 years of the children's lives, using mail surveys. There has been some sample attrition over the time span of the project, with approximately 65 per cent of the sample still participating in the study after 20 years. More of the families who are no longer participating are from a lower socio-economic status background, or include parents who were not born in Australia. Nevertheless, the retained sample of children closely resembles the original cohort on all facets of infant functioning, with no significant differences between the retained and no-longer-participating sub-samples on any infancy characteristic. Hence, while the study continues to include young people with a wide range of attributes, it contains fewer families experiencing socio-economic disadvantage than at the commencement of the study.

The findings presented in this report are based on a sample of 1,135 young adults (499 males, 636 females), who participated in the most recent data collection wave in 2002.

A broad range of individual, family and environmental attributes and characteristics have been assessed during the life of the project. These include 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.

Parents have completed questionnaires about the child's functioning and aspects of family life at every survey wave. Teachers reported on the child's school and social progress, personal adjustment, and temperament style at the Preparatory Grade, Grade 2 and Grade 6 survey waves. From the age of 11 years (which for most was

<b>Table 1. Data collection at 19-20 years: Driving-related questions and response categories in the young adult survey</b>	
<b>Question</b>	<b>Response categories</b>
Type of licence held	learner, car, and/or motor bike
Date obtained learner's permit	month and year
Date obtained probationary licence	month and year
Number of professional lessons	0; 1-5; 6-10; 11-15; 16-20; 21-25; or 26 or more
How often practised driving	rarely; once a month; once a fortnight; once a week; or more often
How often practised driving with parents	rarely; once a month; once a fortnight; once a week; or more often
How often practised driving with others	rarely; once a month; once a fortnight; once a week; or more often
Stress and conflict experienced when practising with parents	none; a little; a lot; or not applicable
Stress and conflict experienced when practising with others	none; a little; a lot; or not applicable
In a normal week, how much time spent driving/riding a motor bike on Monday-Friday in daylight hours	number of hours
In a normal week, how much time spent driving/riding a motor bike on Monday-Friday in night time hours	number of hours
In a normal week, how much time spent driving/riding a motor bike on Saturday-Sunday in daylight hours	number of hours
In a normal week, how much time spent driving/riding a motor bike on Saturday-Sunday in night time hours	number of hours
Experience of crash/accident when s/he was the driver	yes or no
Number of crashes/accidents when s/he was the driver	number of times
Crash circumstances and result: driving alone, damage but no-one injured/killed	number of times
Crash circumstances and result: carrying passengers, damage but no-one injured/killed	number of times
Crash circumstances and result: driving alone, someone injured/killed	number of times
Crash circumstances and result: carrying passengers, someone injured/killed	number of times
Number of times caught for speeding	number of times
In last 10 driving trips, how many times - drove up to 10 km/h over the limit	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - drove between 10 & 25 km/h over the limit	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - drove more than 25 km/h over the limit	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - drove when probably affected by alcohol	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - did not wear a seat belt/helmet at all	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - forgot seat belt/helmet for part of the trip	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - drove when very tired	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times
In last 10 driving trips, how many times - drove when probably affected by an illegal drug	0; 1; 2; 3; 4; 5; 6; 7; 8; 9; or 10 times

Grade 6), the children have reported on their own personal adjustment, relationships with others, and attitudes and beliefs, with a total of six survey waves completed by the young people thus far. A noteworthy aspect of the study is the availability of multiple sources of report for most domains and at most survey waves, thereby providing a rich and reliable account of this cohort of children as they progressed from infancy, through childhood and adolescence and into early adulthood.

## Driver behaviour measures

In the latest data collection wave at 19-20 years of age in the year 2002, young adult participants and their parents completed questions about the young person's experiences as a learner driver, licensing status, current time spent driving, typical driving behaviour, and their crash and enforcement experiences. The measures used to assess these issues are shown in Tables 1 and 2.

<b>Question</b>	<b>Response categories</b>
Type of licence held by young adult	learner, car, and/or motor bike
How often s/he practised driving with parents	rarely; once a month; once a fortnight; once a week; or every few days
How often s/he practised driving with others	rarely; once a month; once a fortnight; once a week; or every few days
Stress and conflict experienced when parents practised with young adult	none; a little; a lot; or not applicable
Young adult's experience of crash/accident when s/he was the driver	yes or no
Number of crashes/accidents when s/he was the driver	number of times
Crash circumstances and result: driving alone, damage but no-one injured/killed	number of times
Crash circumstances and result: carrying passengers, damage but no-one injured/killed	number of times
Crash circumstances and result: driving alone, someone injured/killed	number of times
Crash circumstances and result: carrying passengers, someone injured/killed	number of times
Number of times young adult has been caught speeding	number of times
In general, how often does s/he drive up to 10 km/h over the limit	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he drive between 10 & 25 km/h over the limit	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he drive more than 25 km/h over the limit	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he drive when probably affected by alcohol	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he not wear a seat belt/(helmet if motor bike)	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he drive when very tired	never; rarely; sometimes; often; always; or don't know
In general, how often does s/he drive when probably affected by an illegal drug	never; rarely; sometimes; often; always; or don't know

## Measures from the longitudinal data set

Data from the multi-wave data set was used to investigate the longitudinal precursors and concurrent correlates of differing patterns of driver behaviour. While a wealth of data was available from the 13 survey waves, in the interests of economy, some consolidation<sup>1</sup> across time points was undertaken. This consolidation was designed to parallel the major developmental stages. Thus, the following eight time points were employed:

- *infancy*, covering 4 to 8 months of age, survey wave 1
- *toddlerhood*, from 1 to 3 years of age, survey waves 2 and 3
- *early childhood*, 3-4 years of age, survey wave 4
- *mid childhood*, 5 to 8 years of age, survey waves 5 and 6
- *late childhood*, from 9 to 12 years, survey waves 7 and 8
- *early adolescence*, 12 to 14 years, survey waves 9 and 10
- *mid/late adolescence*, 15 to 18 years, survey waves 11 and 12
- *early adulthood* 19-20 years, survey wave 13

Table 3 displays the domains, variables and time points used in the longitudinal analyses. A more detailed description of the data collected at each survey wave may be found in Appendix 1.

<i>Domain</i>	<i>Time Point, Dimension, and Source of Report</i> (P) = Parent report (IWN) = Infant Welfare Nurse report (T) = Teacher report (Ch) = Child/adolescent/adult self report
<b>Temperament style</b>	<i>In infancy</i> (4-8 months, survey wave 1) activity/reactivity, approach/sociability, cooperation/manageability, irritability (P); Global temperament rating - how easy/difficult the baby's temperament is (IWN)
	<i>In toddlerhood</i> (composite across 1-3 years, survey waves 2 & 3) reactivity; approach/sociability, irritability, persistence, cooperation/manageability (P)
	<i>In early and mid-childhood</i> (4 years of age, survey wave 4 (early childhood); composite across 5-8 years, survey waves 5 & 6 (mid childhood) inflexibility, approach/sociability, persistence (P); reactivity, task orientation (T - composite across 5-8 years, survey waves 5 & 6)
	<i>In late childhood, early adolescence and mid/late adolescence</i> (composite across 9-12 (late childhood); 13-14 (early adolescence); and 15-18 (mid/late adolescence, survey waves 7 to 12) negative reactivity, approach/sociability, persistence; activity (P); task orientation (T - in late childhood only)
	<i>In early adulthood</i> (20 years, survey wave 13) negative reactivity, approach/sociability, persistence (P & Ch)
<b>Behaviour problems</b>	<i>In Infancy</i> behaviour problems composite (sleeping problems, excessive crying, colic) (P)
	<i>In toddlerhood</i> behaviour problems composite (e.g. temper tantrums, attention problems, excessive shyness) (P)

*Table 3 continued*

1 Where identical measures were available at adjacent time points, composite across-time variables were constructed, first standardising the original variables and then computing the average of the standardised variables. For example, the Rutter Child Behaviour Questionnaire (Rutter, Tizard & Whitmore 1970) was used to obtain parental ratings of aggression at 5-6 and 7-8 years, permitting the construction of a single, across-time estimate of parent-reported aggressive tendencies from 5-8 years of age

Table 3 continued

	<i>In early, mid and late childhood</i> aggression, hyperactivity, anxiety (P & T); depression added in late childhood (P & T); aggression, hyperactivity, anxiety, depression (Ch - in late childhood only)
	<i>In early and mid/late adolescence</i> aggression, attention problems, anxiety-withdrawal (P); oppositional behaviour, hyperactivity, anxiety, depression; multi-substance use; antisocial behaviour <sup>1</sup> (Ch)
	<i>In early adulthood</i> aggression, anxiety-withdrawal (P); anxiety, depression; multi-substance use; antisocial behaviour (Ch)
Social skills	<i>In mid-childhood</i> popularity/social skills (T)
	<i>In late-childhood</i> assertiveness, cooperation, self control (T)
	<i>In late childhood, early adolescence, mid/late adolescence and early adulthood</i> assertiveness, cooperation, self control, responsibility, (P); assertiveness, cooperation, self control, empathy (Ch)
Other individual attributes	<i>From early adolescence onwards</i> emotional control (Ch)
	<i>In early and mid/late adolescence</i> sensation seeking (Ch)
	<i>In late adolescence</i> coping style - use of active adaptive strategies (e.g. seeking support), less adaptive: internally focused (e.g. wishful thinking); acting out strategies (e.g. react explosively); identity development - clarity, optimism about the future (Ch)
	<i>In early adulthood</i> life satisfaction (Ch); civic engagement and participation (P & Ch); social capital (Ch)
School adjustment and achievement	<i>In mid-childhood</i> school readiness; academic competence; reading skills (T)
	<i>In late-childhood</i> academic competence (T)
	<i>In early and mid/late adolescence</i> school achievement /adjustment difficulties (P); school achievement /adjustment difficulties in early to mid adolescence (Ch); school attachment/bonding in mid to late adolescence (Ch)
Peer relationships	<i>In late childhood</i> quality of peer relationships; antisocial peer friendships (P); quality of peer relationships (T); self concept about peer relationships (Ch)
	<i>In early and mid/late adolescence</i> peer involvement, participation in organised peer group activities, antisocial peer friendships (P); attachment to peers, friendship quality, antisocial peer friendships (Ch)
	<i>In early adulthood</i> number of close friends, antisocial peer friendships, in a romantic relationship (P & Ch); positive relationships with peers (Ch)
Parent-child relationship	<i>At all time points</i> rating of how easy/difficult the parent finds the child (P)
	<i>In infancy</i> how well the mother-baby pair was doing (IWV)
	<i>In late childhood</i> self concept about relationships with parents (Ch)
	<i>In early and mid/late adolescence</i> warmth of parent-adolescent relationship (P); attachment to parents (Ch)
	<i>In early adulthood</i> degree of conflict in parent-young adult relationship; positive parent-young adult relationship (P & Ch)
Parenting style	<i>In early and mid/late adolescence</i> degree of supervision/monitoring, use of inductive reasoning, use of harsh discipline (P)
Family environment	<i>At all time points</i> parents' occupational and educational levels, used to form a composite family socio-economic background index (P)
	<i>In infancy</i> parents' age and ethnic background (P)
	<i>From early childhood</i> family size (number of children in the family) (P)
	<i>From mid childhood</i> family stress (number of negative family stresses in past 12 months) (P)
	<i>In early adolescence</i> parental cigarette and alcohol use (P)

Table 3 continued

Table 3 continued

	<i>In late adolescence</i> family residential location (urban/rural), parental separation/divorce/death during child's lifetime (P)
	<i>In early adulthood</i> parental marital status, unemployment, financial strain (P)
<b>Young adult current life circumstances</b>	<i>In early adulthood</i> employment status, average number of hours employed per week, average weekly income, undertaking higher education, living at home/away from home, highest year of secondary school completed, (Ch)
<b>Young adult criminal justice contacts and attitudes<sup>1</sup></b>	<i>In early adulthood</i> contact with the criminal justice system (P); perceived chance of apprehension for drink driving, contact with the police for a driving offence (Ch)

<sup>1</sup> Data relating to antisocial behaviour was collected as part of a collaborative project between the Australian Institute of Family Studies and Crime Prevention Victoria (CPV). The aspects of functioning measured as part of the collaboration with CPV included facets of antisocial behaviour, contact with the criminal justice system, experiences of being a victim of crime, perceptions of the fairness of the criminal justice system and perceptions of the risk of apprehension for committing an offence.