The Longitudinal Study of Australian Children

Annual statistical report 2014

Australian Institute of Family Studies

Australian Government
Department of Social Services

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Growing Up in Australia: The Longitudinal Study of Australian Children is conducted in partnership between the Australian Government Department of Social Services, the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS), with advice provided by a consortium of leading researchers from research institutions and universities throughout Australia.

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Contents

List of tables

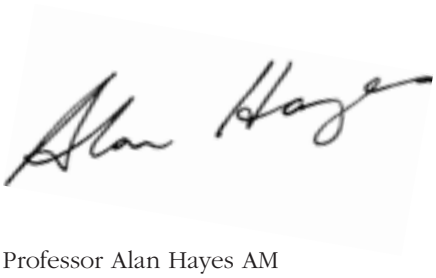
List of figures

Foreword

I am pleased to introduce the fifth volume of the Annual Statistical Report series for *Growing Up in Australia:* The Longitudinal Study of Australian Children (LSAC). This series aims to inform policy development and guide initiatives that focus on strengthening, supporting and sustaining families.

Along with recently released Wave 5 data, this report covers a variety of aspects of the ways in which Australian children's experiences and environments affect their prospects and progress, from birth to 13 years of age. The report casts light on the perceptions of children about parental separation; and for the first time in this series, gender role attitudes of partnered mothers and fathers are discussed and related to the paid and unpaid work within the household. Other sections of the report investigate aspects of children's development, including their early learning experiences at home, difficulties experienced during the transition to high school, and parents' expectations about their children's education. Early onset of criminal and delinquent behaviour among children in late childhood and early adolescence is also covered.

The results of *Growing up in Australia* are increasingly used to advance broader understanding of the factors affecting the wellbeing of Australian families, and are proving useful to researchers, policy-makers, those who provide services and support, and to the community at large.



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This report uses unit record data from *Growing Up in Australia:* The Longitudinal Study of Australian Children (LSAC). LSAC is conducted in partnership between the Australian Government Department of Social Services, the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS), with advice provided by a consortium of leading researchers from research institutions and universities throughout Australia.

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AIFS would also like to acknowledge and thank the children, families and teachers who generously give their time to participate in the study.

For more information about the study, see the LSAC website <www.growingupinaustralia.gov.au>.

The opinions, comments and/or analysis expressed in this report are those of the authors and do not necessarily represent the views of DSS, AIFS or the ABS.

1 Introduction

Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC) is Australia's first nationally representative longitudinal study of child development. The purpose of the study is to provide data that enable a comprehensive understanding of development and life-course trajectories within Australia's current social, economic and cultural environment. The longitudinal nature of the study enables researchers to examine the dynamics of change through the life course as children develop, and to go beyond the static pictures provided by cross-sectional statistics. The study thereby gives policy-makers and researchers access to quality data about children's development in the contemporary Australian environment.

The study was initiated and is funded by the Australian Government Department of Social Services, and is conducted in partnership with the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). A consortium of leading researchers and experts from universities and research agencies provide advice to the study.

This is the fifth volume in the LSAC Annual Statistical Report series, which uses data from the fifth wave of the study for the first time. The purpose of these reports is to provide a snapshot of some of the data from the study and to address policy-relevant questions about aspects of Australian children's lives and development. The report makes use of the longitudinal nature of LSAC data to describe the dynamics of change as children develop, and how their families and lives change as they grow older.

The first section of this introductory chapter provides a brief overview of LSAC, the second describes the analytical approaches used throughout the main chapters of the report, and the third section introduces the subpopulation groups that are used for comparisons in some chapters. The chapter ends with summary tables comprising a glossary of LSAC terms, statistical indicators, and the scales and measures commonly used throughout the report.

1.1 About the study

Study design

The LSAC study has an accelerated cross-sequential design, with two cohorts of children of differing ages. One of the advantages of this type of design is that it provides data on later developmental pathways and outcomes before the younger cohort of the two matures. From Wave 3 there is data on children of the same age from both cohorts at different time points.

The B ("baby") cohort was aged 0–1 years at the beginning of the study (born between March 2003 and February 2004); and the K ("kindergarten") cohort was aged 4–5 years at the beginning of the study (born between March 1999 and February 2000).

The first wave of data collection took place in 2004, with subsequent main waves every two years. In 2005 (Wave 1.5), 2007 (Wave 2.5) and 2009 (Wave 3.5), parents were also asked to complete a between-waves mail survey. In 2011 (Wave 4.5), the between-wave data collection changed from a paper-based questionnaire to an Internet-based form for respondents to report changes in contact details to aid tracking. Table 1.1 (on page 2) summarises the ages and sample sizes for the two cohorts across the first five main waves of the study.

Table 1.1: Age ranges and numbers of children, B and K cohorts, Waves 1–5

	Wave 1 (2004)	Wave 2 (2006)	Wave 3 (2008)	Wave 4 (2010)	Wave 5 (2012)
B cohort	0–1 year 5,107	2–3 years 4,606	4–5 years 4,386	6–7 years 4,242	8–9 years 4,085
K cohort	4–5 years 4,983	6–7 years 4,464	8–9 years 4,331	10–11 years 4,169	12–13 years 3,956

Note: This table presents the numbers of children who responded at each wave.

As mentioned, this design means that from the third wave of the study, the children's ages overlap; that is, children were aged 4–5 years both in the first wave for the K cohort and in the third wave for the B cohort. In covering the first five waves of the study, this report includes data on children between the ages of 0 and 13 years.

Respondents and collection methods

The use of multiple respondents in LSAC provides a rich picture of children's lives and development in various contexts. Across the first five waves of the study, data were collected from:

- parents of the study child:[1]
  - Parent 1 (P1)—defined as the parent who knows the most about the child (not necessarily a biological parent);[2]
  - Parent 2 (P2), if there is one—defined as another person in the household with a parental relationship to the child, or the partner of Parent 1 (not necessarily a biological parent); and
  - a parent living elsewhere (PLE), if there is one—a parent who lives apart from Parent 1 but who has contact with the child;
- the study child;
- carers/teachers (depending on the child's age); and
- interviewers.

In the first four waves of the study, the primary respondent was the child's Parent 1. In the majority of cases, this was the child's biological mother, but in a small number of families this was someone else who knew the most about the child. Since Wave 2, the K cohort children have answered age-appropriate interview questions, and from Wave 4 they have also answered a series of self-complete questions. The B cohort children answered a short set of interview questions in Wave 4 for the first time. As children grow older, they are progressively becoming the primary respondents of the study.

A variety of data collection methods are used in the study, including:

- conducting face-to-face interviews:
  - recorded on paper; and
  - using computer-assisted interviews (CAI);
- filling in self-complete questionnaires:
  - during interviews (paper forms, computer-assisted self-interviews (CASI), and audio computer-assisted self-interviews (ACASI);
  - on leave-behind paper forms;
  - on mailout paper forms; and
  - on Internet-based forms;
- physically measuring the child, including height, weight, girth, body fat and blood pressure;
- directly assessing the child's vocabulary and cognition;
- completing time use diaries;
- conducting computer-assisted telephone interviews (CATI); and
- linking to administrative or outcome data (e.g., Medicare, NAPLAN).

[1] The terms "Parent 1" and "Parent 2" are used for consistency and are not intended to suggest that one parent's relationship with their child is more important than the other parent's relationship.

[2] For separated families in which both parents provided care for the child, the interviewer in Wave 1 worked with the family to identify who the child's Parent 1 was for the purposes of data collection. Where possible, the same parent has been kept as P1 in subsequent waves (see section 1.2 "Key points to be noted" for details).

The interviews and questionnaires include validated scales appropriate to the children's ages (see section 1.4 on page 9 for a list of the scales used in this report).

Sampling and survey design

The sampling unit for LSAC is the study child. The sampling frame for the study was the Medicare Australia (formerly Health Insurance Commission) enrolments database, which is the most comprehensive database of Australia's population, particularly of young children. In 2004, approximately 18,800 children (aged 0–1 or 4–5 years) were sampled from this database, using a two-stage clustered design. In the first stage, 311 postcodes were randomly selected (very remote postcodes were excluded due to the high cost of collecting data from these areas). In the second stage, children were randomly selected within each postcode, with the two cohorts being sampled from the same postcodes. A process of stratification was used to ensure that the numbers of children selected were roughly proportionate to the total numbers of children within each state/territory, and within the capital city statistical districts and the rest of each state. The method of postcode selection took into account the number of children in the postcode; hence, all the potential participants in the study Australia-wide had an approximately equal chance of selection (about one in 25).[3]

Response rates

The 18,800 families selected were then invited to participate in the study. Of these, 54% of families agreed to take part in the study (57% of B cohort families and 50% of K cohort families). About 35% of families declined to participate (33% of B cohort families and 38% of K cohort families), and 11% of families could not be contacted (e.g., because the address was out-of-date, or only a post office box address was provided; 10% of B cohort families and 12% of K cohort families).

This resulted in a nationally representative sample of 5,107 0–1 year olds and 4,983 4–5 year olds who were Australian citizens or permanent residents. Table 1.2 presents the response rates for each of the five main waves.

Table 1.2: Response rates, main waves, B and K cohorts, Waves 1–5

	Wave 1	Wave 2	Wave 3	Wave 4	Wave 5
B cohort					
Number of responses	5,107	4,606	4,386	4,242	4,077 [b]
Response rates of Wave 1 (%)	100.0	90.2	85.9	83.0	80.0
Response rates of available sample (%) [a]	–	91.2	88.2	86.0	83.5
K cohort					
Number of responses	4,983	4,464	4,332 [c]	4,164 [c]	3,952 [c]
Response rates of Wave 1 (%)	100.0	89.6	86.9	83.6	79.4
Response rates of available sample (%) [a]	–	90.9	89.7	87.2	83.5
Total					
Number of responses	10,090	9,070	8,718	8,406	8,029
Response rates of Wave 1 (%)	100.0	89.9	86.4	83.3	79.7
Response rates of available sample (%) [a]	–	91.1	89.0	86.6	83.5

Notes: This table refers to the numbers of parents who responded at each wave. Percentages are based on weighted data. [a] The available sample excludes those families who opted out of the study between waves. [b] B cohort: different numbers of parents and their children responded at Wave 5 (There were eight cases where a child interview was completed and the main interview with the parents was not). [c] K cohort: different numbers of parents and their children responded at Wave 3 (in one case a parent interview was completed but the interview with the study child was not), Wave 4 (in five cases a child interview was completed but the main interview with the parents was not) and Wave 5 (in four cases a child interview was completed but the main interview with the parents was not).

[3] See Soloff, Lawrence, and Johnstone (2005) for more information about the study design.

1.2 Analyses presented in this report

This report includes data from the first five main waves of the study, though given the breadth and depth of topics included in the study, individual chapters in this report do not necessarily use data from all five waves and/or both cohorts. Analyses for the two cohorts (B and K) are presented separately throughout the report.

Each chapter addresses a series of policy-relevant questions using descriptive statistical analyses. In answering these questions, chapters generally take one or more of the following approaches:

- *comparisons between subpopulation groups* (summarised in section 1.3) on the various aspects of children's environments and development; and
- examinations of *trends across waves* as children grow older.

Weighting and survey analysis

Sample weights (for the study children) have been produced for the study dataset in order to reduce the effect of bias in sample selection and participant non-response (Cusack & Defina, 2014; Daraganova & Sipthorp, 2011; Misson & Sipthorp, 2007; Sipthorp & Misson, 2009; Soloff et al., 2005; Soloff, Lawrence, Misson, & Johnstone, 2006). When these weights are used in the analysis, greater weight is given to population groups that are under-represented in the sample, and less weight to groups that are over-represented in the sample. Weighting therefore ensures that the study sample more accurately represents the sampled population.

These sample weights have been used in analyses presented throughout this report. Cross-sectional or longitudinal weights have been used when examining data from more than one wave. Analyses have also been conducted using Stata® *svy* (survey) commands, which take into account the clusters and strata used in the study design when producing measures of the reliability of estimates.

Key points to be noted

Parent 1 is defined as the child's primary caregiver, or the parent who knows the child best. The majority of Parent 1 respondents were mothers (i.e., at all waves, more than 95% of Parent 1 respondents have been women and the majority of Parent 2 respondents have been men).

Parent 1 for each study child was defined by the family at Wave 1. At subsequent waves, the preference, where possible, has been to retain the same person as Parent 1 to maintain the longitudinal consistency of the data. However, if Parent 1 no longer resides with the child or is temporarily away, Parent 2 of the previous wave becomes Parent 1. If both Parent 1 and Parent 2 do not reside with the child or are temporarily away, then a new Parent 1 (the best person to ask about the child's health, development and care) is assigned. Thus, Parent 1 and Parent 2 are sometimes not the same person in each wave, with different parents or guardians potentially occupying different roles at each wave.

Unless specifically noted, all references to the child's "household" or "family" are to those of Parent 1, and do not include any other household or family the child may have with a parent living elsewhere. Similarly, unless specified in the chapter, any reference to "parents" is to Parent 1 and Parent 2, rather than to parents living elsewhere. In some chapters, data are reported for mothers and fathers rather than for Parent 1 and Parent 2.

Some chapters compare responses to particular questions across waves. In some cases, these questions were collected using different methods in different waves (e.g., by interview in one wave and by self-complete questionnaire in another).

1.3 Subpopulation groups

This section introduces the subpopulation groups that are used in some of the chapters in this report. Most of these subpopulation groups were introduced in detail in the LSAC *Annual Statistical Report 2010* (AIFS, 2011), and are summarised in Table 1.3 (child characteristics; on page 5), Table 1.4 (parent and family characteristics; on page 7), and Table 1.5 (school characteristics; on page 8). As described above, the percentages shown in these three tables are based on weighted data.

Child characteristics

The child characteristics at the first five waves are summarised in Table 1.3.

Table 1.3: Child characteristics, B and K cohorts, Waves 1–5

Subpopulation categories	B cohort					K cohort				
	Wave 1 (0–1 years) (%)	Wave 2 (2–3 years) (%)	Wave 3 (4–5 years) (%)	Wave 4 (6–7 years) (%)	Wave 5 (8–9 years) (%)	Wave 1 (4–5 years) (%)	Wave 2 (6–7 years) (%)	Wave 3 (8–9 years) (%)	Wave 4 (10–11 years) (%)	Wave 5 (12–13 years) (%)
Child gender [a]										
Boys	51.2	51.1	51.1	51.1	51.2	51.2	51.3	51.3	51.2	51.8
Girls	48.8	48.9	48.9	48.9	48.8	48.8	48.7	48.7	48.8	48.2
No. of observations	5,107	4,606	4,386	4,242	4,085	4,983	4,464	4,332	4,169	3,956
Main language spoken at home by child [a]										
English	87.2	87.9	87.0	86.8	89.2	86.0	85.2	86.1	85.9	88.7
Not English	12.8	12.1	13.0	13.2	10.8	14.0	14.8	13.9	14.1	11.3
No. of observations	5,104	4,603	4,384	4,239	4,084	4,983	4,464	4,331	4,164	3,956
Child has disability or medical condition [b]										
Yes	–	5.9	8.6	5.4	4.1	–	11.1	7.7	6.2	4.7
No	–	94.1	91.4	94.6	95.9	–	88.9	92.3	93.8	95.3
No. of observations	–	4,606	4,386	4,242	4,047	–	4,464	4,331	4,164	3,913
Child weight status [c]										
Underweight	–	5.3	6.5	5.4	5.1	5.2	5.1	5.5	5.9	6.7
Normal weight	–	71.3	69.7	73.8	71.1	74.2	75.2	69.5	65.6	65.7
Overweight or obese	–	23.4	23.8	20.8	23.9	20.6	19.7	25.0	28.5	27.5
No. of observations	–	4,522	4,324	4,181	3,998	4,934	4,423	4,289	4,018	3,803
Child Indigenous status [a]										
Indigenous	4.9	5.1	4.9	5.2	4.4	3.9	3.7	3.7	3.8	2.9
Non-Indigenous	95.1	94.9	95.1	94.8	95.6	96.1	96.3	96.3	96.2	97.1
No. of observations	5,107	4,606	4,386	4,242	4,085	4,981	4,462	4,329	4,167	3,956

Notes: Percentages are based on weighted data. [a] Recorded at Wave 1. [b] Questions about whether the study child had a disability or medical condition were asked differently in Wave 1, so these data are not included here. [c] Weight status is based on body mass index. It was not calculated at Wave 1 for the B cohort.

Child gender

Parent 1 reported the child's gender at Wave 1.

Main language spoken at home by child

At Wave 1, Parent 1 respondents were asked whether they mainly spoke English or a language other than English at home. Languages were classified according to the Australian Standard Classification of Languages (ABS, 2005), and these were summarised into English or non-English languages.

Child has disability or medical condition

At each of Waves 2 to 5, Parent 1 respondents were asked whether each household member had a medical condition or disability that had lasted six months or more, while being shown a prompt card with a list of conditions such as sight problems; hearing problems; blackouts, fits or loss of consciousness; difficulty learning or understanding things; and difficulty gripping things.

Child weight status

At each wave (except Wave 1 for the B cohort), interviewers measured the children's weight and height to calculate their body mass index (BMI). The children were then classified as (a) normal weight; (b) overweight or obese (Cole, Bellizzi, Flegal, & Dietz, 2000); or (c) underweight (Cole,

Flegal, Nicholls, & Jackson, 2007). Children in the B cohort at Wave 1 were not measured because of the technical difficulties of measuring infants' height and weight.[4]

Child Indigenous status

Parent 1 respondents identified at Wave 1 whether the study child was of Aboriginal and/or Torres Strait Islander background. These results were summarised into a measure of whether the child was Indigenous or non-Indigenous.

Parent and family characteristics

The parent and family/household characteristics at the first five waves are summarised in Table 1.4 (on page 7).

Family type

Two-parent families are defined as those in which the child lives with two parents in Parent 1's household. This includes children living with biological and/or non-biological parents, children living with same-sex couple parents, and children living in other two-parent family types (e.g., with their mother and their grandmother).[5]

Lone-mother households are those in which the child lives in a household with a female Parent 1 only (who is not necessarily the child's biological mother). Where the parents have separated and the child spends time with both parents, the family type is defined according to Parent 1's household, as identified by the study family. There are very few lone-father households (less than 1% for each cohort), so these have been excluded from analyses comparing different family types.

Family socio-economic position

The measure of family socio-economic position (SEP), developed by Blakemore, Strazdins, and Gibbings (2009), uses information about combined annual family income, educational attainment of parents, and parents' occupational status to summarise the social and economic resources available to families. The standardised SEP scores have been divided into quartiles and summarised into the lowest 25%, the middle 50% and the highest 25%.

Number of siblings in the household

At each wave, Parent 1 provides details about all household members, including the study child's siblings. Siblings include biological, adopted, foster, step- and half-siblings. Children may also have siblings who do not live in their household, but these siblings are not included here.

Main language spoken at home by Parent 1

The language spoken by Parent 1 is classified using the same approach described above for the study child.

Parent 1's country of birth

Parent 1 is grouped into those born in Australia or New Zealand and those born overseas, based on their country of birth, provided at Wave 1.

Parents' education level

At each wave, Parent 1 respondents are asked about the highest qualification held by each of the parents. This information is used to categorise parents into those who have a university degree (or higher) and those who do not. Comparisons are made for Parent 1 respondents only, and for both

[4] However, the study child's birth weight and length were recorded.

[5] In the B cohort at Wave 1, 0.08% of children lived with same-sex couple parents and 0.11% of children lived with Parent 1 and Parent 2 who are not in a partnered relationship (e.g., with their mother and their grandmother, aunt/uncle or unrelated adult). In the K cohort at Wave 1, 0.04% of children lived with same-sex parents and 0.11% of children lived with Parent 1 and Parent 2 who are not in a partnered relationship (e.g., lived with their mother and their grandmother, aunt/uncle or unrelated adult).

Table 1.4: Parent and family characteristics, B and K cohorts, Waves 1–5

Subpopulation categories	B cohort					K cohort				
	Wave 1 (0–1 years) (%)	Wave 2 (2–3 years) (%)	Wave 3 (4–5 years) (%)	Wave 4 (6–7 years) (%)	Wave 5 (8–9 years) (%)	Wave 1 (4–5 years) (%)	Wave 2 (6–7 years) (%)	Wave 3 (8–9 years) (%)	Wave 4 (10–11 years) (%)	Wave 5 (12–13 years) (%)
Family type										
Two-parent family	89.5	87.0	86.0	84.7	84.6	85.6	83.9	84.0	82.5	83.4
Lone-mother family	10.5	13.0	14.0	15.3	15.4	14.4	16.1	16.0	17.5	16.6
No. of observations	5,104	4,593	4,375	4,221	4,050	4,946	4,426	4,288	4,113	3,885
Family socio-economic position [a]										
Lowest 25%	28.6	31.2	31.5	32.9	–	28.6	30.3	31.5	32.1	–
Middle 50%	48.9	47.9	47.8	46.7	–	50.0	48.8	48.8	48.4	–
Highest 25%	22.5	20.9	20.7	20.4	–	21.4	20.9	19.7	19.6	–
No. of observations	5,092	4,602	4,382	4,215	–	4,965	4,458	4,327	4,124	–
Number of siblings in the household										
None	39.1	19.9	11.4	9.5	9.0	11.5	9.6	8.6	8.6	9.5
One	36.4	47.3	46.3	43.6	42.5	47.5	43.9	42.5	42.5	43.4
Two or more	24.5	32.8	42.3	46.9	48.5	41.0	46.5	48.9	48.9	47.1
No. of observations	5,107	4,606	4,386	4,242	4,077	4,983	4,464	4,331	4,164	3,951
Main language spoken at home by Parent 1										
English	83.1	83.7	83.1	82.8	85.6	82.5	81.6	82.7	82.6	84.8
Not English	16.9	16.3	16.9	17.2	14.4	17.5	18.4	17.3	17.4	15.2
No. of observations	5,107	4,606	4,386	4,238	4,077	4,983	4,464	4,328	4,146	3,952
Parent 1's country of birth										
Overseas	20.0	22.7	23.2	23.4	22.0	23.3	24.2	23.5	23.5	22.5
Australia/NZ	80.0	77.3	76.8	76.6	78.0	76.7	75.8	76.5	76.5	77.5
No. of observations	5,107	4,606	4,386	4,242	4,077	4,982	4,463	4,327	4,159	3,952
Parent 1's education level										
University degree or higher	29.1	28.3	29.6	30.0	33.4	24.1	24.4	25.1	25.8	28.7
Less than university degree	70.9	71.7	70.4	70.0	66.6	75.9	75.6	74.9	74.2	71.3
No. of observations	5,107	4,606	4,386	4,242	4,085	4,983	4,464	4,331	4,164	3,956
Both parents' education level										
At least one parent has a university degree (or higher)	37.5	36.9	38.4	38.9	42.4	33.9	34.3	35.0	35.3	38.8
Neither parent has a university degree	62.5	63.1	61.6	61.1	57.6	66.1	65.7	65.0	64.7	61.2
No. of observations	5,104	4,604	4,385	4,240	4,075	4,979	4,463	4,329	4,163	3,948
Family region of residence										
Metropolitan	66.5	62.6	64.9	63.6	62.8	63.7	65.9	62.9	62.4	62.0
Non-metropolitan	33.5	37.4	35.1	36.4	37.2	36.3	34.1	37.1	37.6	38.0
No. of observations	5,107	4,606	4,378	4,231	4,079	4,983	4,464	4,324	4,163	3,952
Neighbourhood disadvantage										
Disadvantaged	27.5	31.1	30.8	30.3	28.7	28.2	31.0	30.8	30.2	30.5
Non-disadvantaged	72.5	68.9	69.2	69.7	71.3	71.8	69.0	69.2	69.8	69.5
No. of observations	5,107	4,606	4,386	4,240	4,077	4,983	4,464	4,331	4,168	3,951

Notes: Percentages are based on weighted data. [a] Family socio-economic position is not currently available at Wave 5. It will be developed in the future, based on the most recent revision of the ABS occupation codes.

parents together (families in which at least one parent has a university degree, versus families in which neither parent has a university degree).

Family region of residence

Families' postcodes are used to link to ABS Census data, which identify whether they live in a metropolitan area (capital city statistical divisions) or non-metropolitan area (the rest of the state outside the capital city statistical divisions).

Neighbourhood disadvantage

Neighbourhood disadvantage was measured using the Socio-Economic Indexes for Areas (SEIFA)—Disadvantage. Those families living in areas in the lowest 25% SEIFA index of disadvantage are considered to be living in an area of socio-economic disadvantage.

School characteristics

For school-aged children (B cohort Waves 4–5, and K cohort Waves 2–5), Parent 1 provided details about the type of school the child attended: government, Catholic, or independent/private schools. Percentages of children at the different school types at each wave are summarised in Table 1.5.

Table 1.5: Children attending different school types, B cohort Waves 4–5 and K cohort Waves 2–5

	B cohort		K cohort			
School type [a]	Wave 4 (6–7 years) (%)	Wave 5 (8–9 years) (%)	Wave 2 (6–7 years) (%)	Wave 3 (8–9 years) (%)	Wave 4 (10–11 years) (%)	Wave 5 (12–13 years) (%)
Government	67.9	65.6	68.8	68.3	66.7	55.8
Catholic	20.8	21.8	20.9	20.5	20.6	23.6
Independent/private	11.3	12.6	10.3	11.2	12.8	20.6
Totals	100.0	100.0	100.0	100.0	100.0	100.0
No. of observations (schools)	4,225	4,061	4,447	4,307	4,142	3,917

Notes: Percentages are based on weighted data. A small proportion of children are being home-schooled. [a] Questions about children's school type were only asked for children of school age; that is, the B cohort in Waves 4–5 and the K cohort in Waves 2–5.

1.4 Summary tables

Glossary of LSAC terms

Term	Description
B cohort	The younger group ("baby" cohort) of study children, aged: ■ 0–1 years in Wave 1 (2004); ■ 2–3 years in Wave 2 (2006); ■ 4–5 years in Wave 3 (2008); ■ 6–7 years in Wave 4 (2010); and ■ 8–9 years in Wave 5 (2012).
K cohort	The older group ("kindergarten" cohort) of study children, aged: ■ 4–5 years in Wave 1 (2004); ■ 6–7 years in Wave 2 (2006); ■ 8–9 years in Wave 3 (2008); ■ 10–11 years in Wave 4 (2010); and ■ 12–13 years in Wave 5 (2012).
LSAC	*Growing Up in Australia*: The Longitudinal Study of Australian Children. A nationally representative longitudinal birth cohort study that commenced in 2004. Data are being collected from study children and their parents, carers and teachers, and through linkage with other national datasets.
Parent 1	The child's Parent 1 (P1) is defined as the child's primary caregiver, or the parent who knows the child best, as determined by the family, usually at Wave 1. In the majority of cases, this is the child's biological mother, but is sometimes the father or another guardian.
Parent 2	The child's Parent 2 (P2) lives in the same household as Parent 1 and is usually the partner of Parent 1. In most cases, this is the child's biological father, but can be the mother, another partner of Parent 1, or another guardian.
Parent living elsewhere (PLE)/non-resident parent	The child's parent who lives in a different household to Parent 1.
Study child (or child)	The sampling unit for LSAC is the study child, so "child" refers to the child selected for inclusion in the study. Data collected and reported relate to this child.
Wave	Periods of data collection: ■ Wave 1 in 2004 (B cohort were 0–1 years, K cohort were 4–5 years); ■ Wave 2 in 2006 (B cohort were 2–3 years, K cohort were 6–7 years); ■ Wave 3 in 2008 (B cohort were 4–5 years, K cohort were 8–9 years); ■ Wave 4 in 2010 (B cohort were 6–7 years, K cohort were 10–11 years); and ■ Wave 5 in 2012 (B cohort were 8–9 years, K cohort were 12–13 years).

Statistical indicators in tables and graphs

Indicator	Notes
†	Relative standard error (RSE)
***	Significance level $p < .001$
**	Significance level $p < .01$
*	Significance level $p < .05$
n. s.	Not statistically significant
I	Confidence interval

Key scales used in the report

Scale	Range	Notes
Achievement Goal Questionnaire (AGQ)	1–7	Elliot and Church (1997) used this scale to investigate achievement goals in students. This scale contains four subscales: (1) performance approach goal; (2) performance avoidance goal; (3) mastery approach goal; and (4) mastery avoidance goal. Each subscale contains three items on a seven-point response scale, from not at all true of me (scored 1) to very true of me (scored 7). Average scores of each subscale were calculated, with higher scores indicating greater level of corresponding learning attitudes.
Matrix Reasoning Test	1–19	The Matrix Reasoning Test is part of the Wechsler Intelligence Scale for Children, 4th edition (WISC-IV), and measures non-verbal intelligence. A higher score represents a better outcome.
National Assessment Program—Literacy and Numeracy (NAPLAN)	0–1,000	The NAPLAN is designed to assess all Australian students in Years 3, 5, 7 and 9 in reading, writing, language conventions (spelling, grammar and punctuation) and numeracy, using a national test that has been conducted annually since 2008, on the same days each year. The NAPLAN assessment process is performed using a national common reporting format by the test administration authorities. The reporting scales are constructed so that given scale scores can be compared across school year levels and over time.
Quality of School Life Questionnaire	6–24	The general satisfaction items from the Quality of School Life Questionnaire (Williams & Batten, 1981) were used to assess children's motivation in learning. The subscale comprises six items, with response option ranging from 1 ("strongly disagree") to 4 ("strongly agree"). The score on the intrinsic motivation scale is the mean of the underlying items, with a higher score indicating a greater level of motivation.
Peabody Picture Vocabulary Test (PPVT)	Age-specific	The PPVT measures receptive vocabulary (Dunn & Dunn, 1997). Scores are created via Rasch modelling. A higher score represents a better outcome.
Strengths and Difficulties Questionnaire (SDQ)	0–40 (for problems) 0–10 (for pro-sociality)	The SDQ assesses peer problems, conduct problems, hyperactivity, emotional problems and prosocial behaviours for children aged 3–16 years. Higher scores on the subscale for hyperactivity/inattention, emotional symptoms, peer relationship problems and conduct problems reflect more problematic behaviour. Lower scores on the prosocial behaviour subscale reflect more problematic behaviour.
Short Temperament Scale for Children (STSC)	12–72	The shortened, 12-item version of the STSC measures child temperament (Prior, Sanson, Smart, & Oberklaid, 2000). Four items assess each of the three temperament dimensions of persistence (child's capacity to see tasks through to completion), reactivity (how intense and volatile the child is), and introversion (reaction to new people and situations). For each item, parents rate their child on a six-point Likert scale (from 1 = almost never, to 6 = almost always). High reactivity scores indicate that children are more intense and less flexible.
Self-Report Early Delinquency Instrument (SRED)	0–85	The short form of Moffitt and Silva's (1988) self-report of delinquency scale measures adolescents' involvement in antisocial behaviour during the previous 12 months. For each of the 17 items, children rate themselves on a five-point Likert scale (from 0 = not at all, to 5 = five or more times). High scores indicate that children are involved in more negative social behaviours.
School Readiness Score (Who Am I?)	25–100	The School Readiness Score (de Lemos & Doig, 1999) is based on an interviewer-administered test of children's ability to perform pre-literacy/pre-numeracy tasks such as reading, copying and writing letters, words, shapes and numbers. A higher score indicates a better outcome. In LSAC, Who Am I? data were collected at Wave 3 for the B cohort and Wave 1 for the K cohort.

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Children's views about parental separation

2

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2.1 Introduction

In a sense, the old adage that children are to be "seen and not heard" reflects the way in which decisions were traditionally made about children's care and living arrangements associated with parental separation. Although this approach may have been in part to protect children from any distress associated with reporting their experiences and preferences, it may also have been influenced by a belief that, until they are around 12 years old, children tend to have much difficulty articulating their views about their lives and making meaningful contributions to decision-making about issues affecting their welfare (for a review, see Pryor & Emery, 2004).

Despite the "misgivings" about the decision-making capacities of children and adolescents, several authors have referred to a growing recognition that children in general are more competent in understanding and articulating their feelings and preferences than previously believed, and that their voices provide important insights that can improve decisions affecting them (Green & Hill, 2005; Parkinson & Cashmore, 2008; Pryor & Emery, 2004; Smith, Taylor, & Tapp, 2003). In line with this development, children's views are now often taken into account in family law proceedings in Australia and several other countries, a practice that Smart (2005) described as "a sudden rush of enthusiasm to hear children's voices" (p. 307).

The recency of this recognition seems surprising given that it is now more than 25 years since the United Nations (UN) General Assembly adopted the Convention on the Rights of the Child (1989), which among many other things, emphasised children's right to express their views freely on matters that affect them and to have their views taken into account in decision-making (Article 12).[1]

The value of taking account of children's views of their experiences and preferences is further reinforced by research suggesting that:

- the levels of agreement between the reports of parents and their children on various aspects of their children's wellbeing are by no means strong;
- factors identified to help explain children's wellbeing can vary according to whether the children or parents provide the wellbeing assessments; and
- regardless of the accuracy of their interpretation of their circumstances, these interpretations will have profound effects on their emotional reactions and behaviour (see Achenbach, McConaughy, & Howell, 1987; Baxter, Weston, & Qu 2011; Cremeens, Eiser, & Blades, 2007; Youngstrom, Loeber, & Stoughamer-Loeber, 2000).

Halpenny, Greene, and Hogan (2008) interviewed a group of children of separated parents aged 8–17 years in Ireland and concluded that these participating children provided sophisticated descriptions of their experience of parental separation and the effects of this on their lives, and clearly had "the ability to review and revise their own perspectives and understanding of what happened within their family" (p. 321). The study highlighted that children had different ways of coping with parental separation and different needs for support. Similarly, based on a qualitative study of a group of Australian children aged 7–17 years whose parents were separated, Campbell

[1] In order to assist with the appropriate implementation of Article 12, the UN Committee on the Rights of the Child published its interpretation of Article 12 in 2009.

(2008) found that the children knew more about their parents' difficulties than the parents and other adults realised, and suggested that the stress of parental separation experienced by children might be alleviated to some extent if children's views were heard by their parents and others. Similarly, reflecting on transcripts of discussions with young children,[2] Moloney (2005) argued that "children can be wiser than many of us might imagine" (p. 217).

Also in Australia, Lodge and Alexander (2010) examined the reports of 623 adolescents aged 12–18 years whose parents had separated after July 2006. They found that the majority of these adolescents said they had wanted to participate in decisions about their living arrangements and many believed that they did have a say on this matter. Similar findings have been reported by some other Australian studies (Campo, Fehlberg, Millward, & Carson, 2012; Cashmore & Parkinson, 2008; Parkinson, Cashmore, & Single, 2005).

Taken together, these various studies highlight the importance of taking into account the views of children, as emphasised in the UN Convention on the Rights of the Child. In relation to children of separated parents, this approach provides a more nuanced understanding of parenting matters and children's adjustment after parental separation—a point noted by Campo et al. (2012) and Weatherall and Duffy (2008).

This chapter focuses mainly on the personal reports of children (aged 12–13 years) about their experiences of parental separation. The following issues are addressed:

- How did the children feel about their parents' separation?
- How did these children whose parents had separated describe the quality of the relationship between their separated parents?
  - To what extent were these children's perceptions similar to those held by their parents?
  - To what extent were these children's perceptions similar to those of other children in LSAC whose parents were living together?
- What proportion of children with separated parents wanted and believed they did have input into decisions affecting their living arrangements?
- How did the children with separated parents feel about their care-time arrangements? For example, what proportion felt that they were spending sufficient time with the parent who was identified as "living elsewhere", and what proportion believed that they had participated in decisions about their living arrangements?
- To what extent, if at all, do children's views about their parents' separation differ according to the following factors:
  - the children's gender;
  - the duration of parental separation; and
  - their care-time arrangements?

2.2 Data

In Wave 5 of the Longitudinal Study of Australian Children (LSAC), children in the K cohort (aged 12–13 years) were asked about a wide range of issues via audio computer-assisted self-interview (ACASI) when in the presence of an interviewer. This was the first wave in which K cohort children whose parents had separated were asked a series of questions regarding their views about their parents' separation. Their responses to these questions form the focus of this chapter. (B cohort children were not asked these questions.)

There were 901 K cohort children with a parent living elsewhere from their primary carer.[3] Of these children, the 726 who had completed the module on parental separation represent the sample on

[2] The first transcript was from the final stages of a group discussion in a philosophy class for children aged 8–10 years from a primary school in Brisbane, and is available on the ABC Radio National website ("Is Small Really Lost?", *Encounter*, 17 July 2005, <www.abc.net.au/radionational/programs/encounter/is-small-really-lost/3365784#transcript>). In the second transcript, a clinical psychologist (Dr Jenn McIntosh) engaged with a six-year-old girl whose separated parents were in a relationship marked by high conflict. The discussion formed part of a clinical demonstration tape on child-inclusive practice.

[3] Another 19 children had both parents living elsewhere.

which this chapter is based. Although the parents of some of these children may have never lived together, they are described as "separated parents" in this chapter for the sake of succinctness.

The 175 children from separated families who did not answer any questions in the module on parental separation include 38 whose primary carer did not give consent for the study child to be invited to participate. Those who completed the module and those who did not were similar in terms of gender profile, but differed significantly in relation to their care-time arrangements and age at parental separation. (The development of the latter variable is described later in this section.) Compared with the children who completed the module, those who did not do so were more likely to have not seen their father in the previous 12 months (33% vs 15%) and to have either experienced parental separation when they were infants (i.e., less than 1 year old) (46% vs 38%) or never lived with both parents (13% vs 6%). In other words, the results in this chapter may not be representative of all the children who had one parent living elsewhere from their primary carer.

One set of analyses in this chapter compares children's perceptions of the quality of the relationship between their parents with the reports of each of their parents. The parents are here classified as "resident" or "non-resident" according to whether they have been identified in LSAC as: (a) living with the child and knowing the child best and thereby becoming the "primary" parent-informant; or (b) living elsewhere. Some children spent 35–65% of nights with each parent (classified by the Child Support Agency as being in "shared care"), but for the purposes of the present analyses, these children were classified as having a "resident parent" and "non-resident parent".[4] Some resident parents decided to skip the module on separation and parenting. Of the 726 children, 696 resident parents (631 mothers and 65 fathers) completed the module, and 392 non-resident parents (351 fathers and 41 mothers) were interviewed. Information provided by these parents is included in the analyses. However, non-resident parents who had not had face-to-face contact with their study child in the previous 12 months were not interviewed. These parents accounted for more than one-half of the non-resident parents who did not participate in Wave 5. It is worth noting that higher proportions of non-resident parents who were not interviewed than those who were interviewed had separated when the study child was under 1 year old (44% vs 35% respectively) or were not living with the child's mother when the child was born (11% vs 3% respectively).

This chapter also examines whether children's views about parental separation varied according to their gender, care-time arrangements and age at parental separation (with the latter reflecting the duration of their parents' separation). Both children and resident parents were asked about the nature of their care-time arrangements. The patterns of arrangements reported by each party were subsequently used in the analyses of the extent to which children's views of parental separation varied according to their care-time arrangements. For this reason, the first set of findings below summarises the care-time patterns that were reported by children and their resident parent.

The age of children at parental separation was derived from resident parents' reports on the age their child was when he or she last lived with both biological parents. Where resident parents did not provide this information and the separation occurred between waves, their child's age at parental separation was set at the mid-point between the two waves.[5] Children were divided into four groups according to their age at parental separation: less than 1 year (applying to 44% of the children), 1–4 years (15%), 5–9 years (23%), and 10+ years (18%).[6]

[4] Based on resident parents' reports, the proportion of children in this sample who appeared to experience shared care time is outlined in section 2.3.

[5] The age at separation was only derived if the separation took place between two consecutive waves or one wave apart (e.g., between Wave 2 and Wave 3, or Wave 3 and Wave 4), or two waves apart (e.g., between Wave 2 and Wave 4, with non-participation in Wave 3; or between Wave 3 and Wave 5, with non-participation in Wave 4). Children who were born after their parents had separated or whose parents had never lived together were classified as being less than 1 year old when their parents had "separated".

[6] As noted above, children here classified as under 1 year old when their parents separated include those whose parents had separated before they were born and those whose parents had never lived together.

2.3 Patterns of care-time arrangements reported by children and resident parents

Children were asked to indicate which parent they mostly or only lived with.[7] Around three in four (73%) nominated their mother, around one in ten (9%) nominated their father, and around one in five (19%) reported that they spent (roughly) equal time with each parent.

Resident parents provided more detailed information about their child's care-time arrangements. On the basis of the reports of resident parents, the following patterns of care-time arrangements emerged:

- 15% of the children had not seen their father in the past year;
- 16% spent only daytime hours with their father;
- 16% spent 1–13% of nights with their father;[8]
- 36% spent 14–34% of nights with their father;
- 10% were in a shared care-time arrangement (covering 35–65% of nights with each parent); and
- 2% spent most or all nights with their father (66–100% of nights).

These categories roughly correspond with those developed by the Australian Government Department of Human Services—Child Support, for the assessment of child support liability.[9] There was no statistically significant difference in care-time arrangements between boys and girls according to reports of both children themselves and resident parents.

2.4 Children's views about the separation of their parents

Children were asked to indicate the extent to which they agreed or disagreed with each of five statements relating to their parents' separation: (a) I feel relieved they separated; (b) I wish they would get back together; (c) I feel split or torn between my parents; (d) I feel that I can't talk about one parent to the other; and (e) I find it hard to be fair to both parents. Six response options were provided to the children: strongly agree, agree, neither agree nor disagree, disagree, strongly disagree, and don't know. Figure 1 shows the patterns of answers provided by the children for each of the statements.

The statements "I feel relieved they separated" and "I wish they would get back together" focus on how children feel about the separation per se, whereas the other three statements focus on issues relating to difficulties children may have in handling inter-parental sensitivities arising from the breakdown of the relationship. This is particularly the case for the statements "I feel that I can't talk about one parent to the other" and "I find it hard to be fair to both parents".

Although the two issues "I feel relieved they separated" and "I wish they would get back together again" seem to take a somewhat opposing stance, these statements more commonly generated disagreement (strongly or otherwise) than agreement: 36–41% disagreed with each, while 19% agreed that they felt relieved about the separation and 27% agreed that they wished their parents would get back together. Around one-quarter indicated that they neither agreed nor disagreed with each statement (taken separately) and 12–15% selected the "don't know" option.

Disagreement was also more commonly expressed than agreement for two of the other three statements. Of the five statements, the one that was most commonly "rejected" was "I feel split or torn between my parents". Nearly one-half of the children (47%) disagreed with this statement, 19% agreed, 24% said they neither agreed nor disagreed, and 11% selected the "don't know" option.

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7 The response options were: mostly (or only) with mum, mostly (or only) with dad, live equally with both parents.

8 The proportion of nights with the father refers to the proportion of nights per year. Resident parents were asked how many nights their study child usually stayed with the other parent every week, every fortnight, every month or every year. The number of nights per period was converted to the number of nights per year.

9 The formula used in setting child support liability is based in part on the following categories of nights of care: below regular care: 0–13%; regular care: 14–34%; shared care: 35–47% (this is subdivided into three categories, not listed here, that affect liability); primary care: 66–86%; and above primary care: 87–100%.

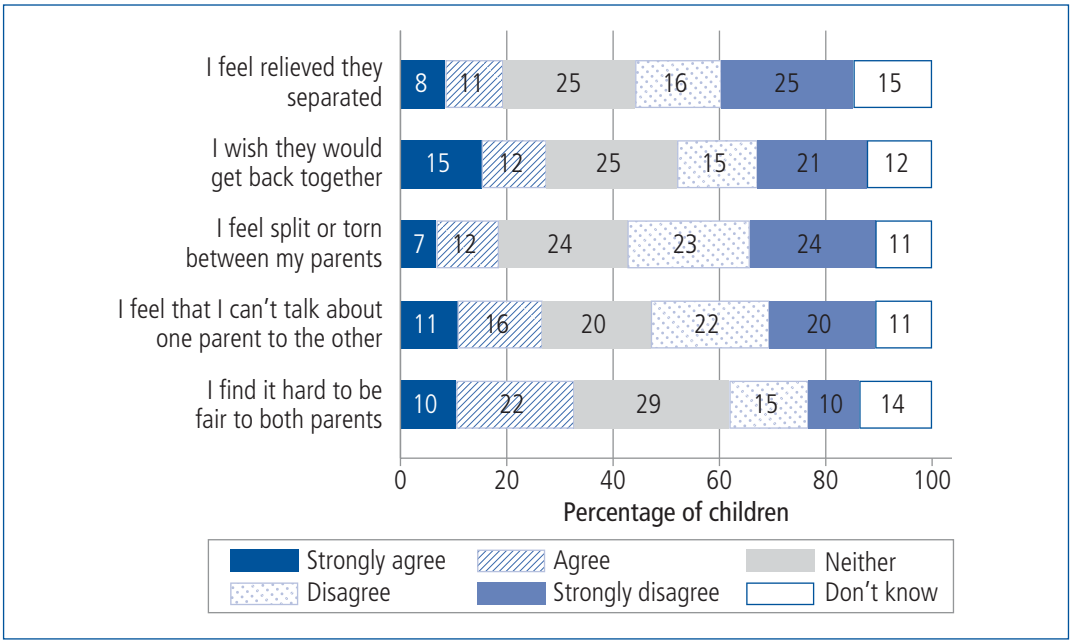
The remaining statement that was more likely to be "rejected" than "accepted" was "I feel that I can't talk about one parent to the other". Although 42% disagreed with this statement, 27% agreed, with the remainder responding that they neither agreed nor disagreed (20%) or didn't know (11%).

The statement "I find it hard to be fair to both parents", was the only one which generated greater agreement than disagreement. Around one-third of the children (32%) agreed with this statement and one-quarter (25%) disagreed. On the other hand, 29% selected the "neither agree nor disagree" option and 14% indicated that they were not sure about this matter.

What does this all mean? Firstly, the response options "neither agree nor disagree" or "don't know" were fairly common across these different statements, applying to 31–43% of children (neither agree nor disagree: 20–29%; don't know: 11–15%). Secondly, for children who indicated agreement or disagreement, the most common responses were: not feeling split or torn between the parents (47% of all children), feeling able to talk to each parent about the other (42%), not feeling relieved that they separated (41%), not wishing that their parents would get back together again (36%), and finding it hard to be fair to both parents (32%). It seems reasonable to suggest then, that children were more inclined to have accepted the separation and to be handling the need to deal with each parent well. However, a substantial minority wished their parents would get back together again and/or had difficulties in dealing with each parent in some way, especially in being fair to both parents or in feeling comfortable regarding talking about one parent to the other.

Children were also asked: "Do you think it was better for you that your parents separated, or do you think it would have been better for you if they stayed together?" Children were nearly twice as likely to indicate that separation was the better of the two alternatives for them. One-third (34%) said that their parents' separation was better for them, while nearly one in five (18%) considered that it would have been better for them had their parents stayed together. The remainder, representing around half the children (48%), either said that neither would have been worse or better for them (18%) or responded with "don't know" (30%). The high uncertainty rate about this issue is not surprising given that the parents of many of the children in this sample had separated when the children were very young (44% of the children were under 1 year at the time, and another 15% were 1–4 years old).

The views of children on parental separation (Figure 2.1) varied according to their overall evaluation of whether their parents' separation was better for them, whether they would have been better off had their parents stayed together, or whether neither alternative resulted in their being better off.

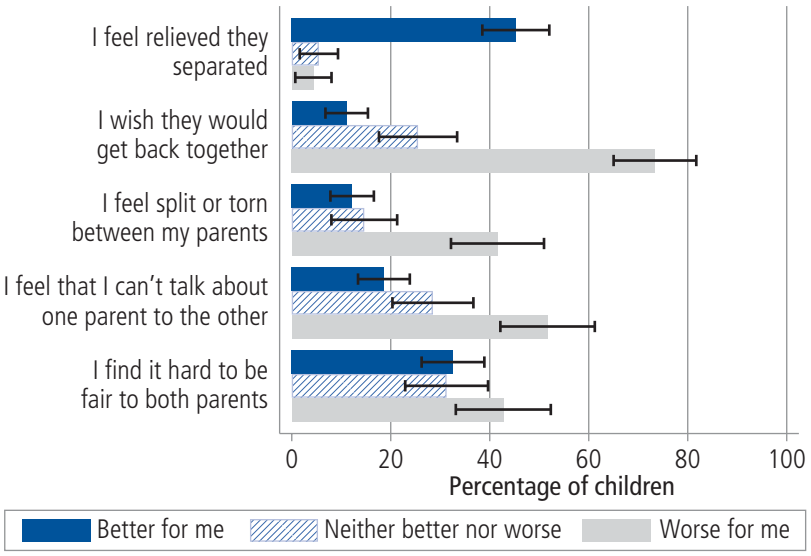


Notes: Some children responded to some items but skipped others. Response sizes ranged from 710 to 714.

Figure 2.1: Children's level of agreement or disagreement with statements about their parents' separation, K cohort, Wave 5

As shown in Figure 2.2, children who felt that parental separation was better for them were more likely than the other two groups to feel relieved by the separation (45% vs 4–7%), and children who believed that they would have been better off had their parents stayed together were much more likely than the other groups to report that they wished their parents would get back together (73% vs 12–26%). In addition, those who believed that they would have been better off had their parents stayed together were more likely than the other two groups to indicate that they: felt split or torn between their parents (42% vs 12–15%), and felt that they could not talk about one parent to the other (52% vs 19–29%). Their views on being fair to both parents did not differ significantly (43% vs 31–33%).

Although it is not possible to identify causal connections between these factors, difficulties in handling inter-parental sensitivities may have contributed to children's overall assessments that they would have been better off had their parents stayed together. Nevertheless, many other post-separation experiences are likely to have influenced such beliefs, including possible increases in financial hardship, relocation, distance between the two homes, a parent re-partnering, and so on.



Notes: Sample sizes: better for me, $n = 246$; neither, $n = 133$; worse for me, $n = 127$. For each group, numbers of children on which percentages were based may vary slightly due to refusals to individual items. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap (or slight overlap)[a] in the confidence intervals for comparison groups indicates that the values are statistically significantly different at $p < .05$.
[a] According to Cumming and Finch (2005, p. 180), when the proportion of overlap, expressed as a proportion of the average length of margin of the two groups, is 50% or less, the difference in means between the two independent groups is statistically significant at the 5% level.

Figure 2.2: Proportion of children who agreed with statements about their parents' separation, by whether they thought the separation was better for them, K cohort, Wave 5

Simplifying children's responses to parental separation statements

Much of the rest of this chapter focuses on the extent to which children's views on the above matters varied according to their personal characteristics, such as gender, care-time arrangements and age at parental separation. In order to simplify the results, two scales were derived from five of the items. The first scale, regarding feeling relief about the parental separation, was based on two items: feeling relieved that the parents had separated; and wishing that they would get back together. The second scale, reflecting a sense of divided loyalties, was based on the other three items: feeling split or torn between parents; feeling unable to talk about one parent to the other; and finding it hard to be fair to both parents. With the exception of one item, children's responses on these items were assigned a rating from "1" (strongly disagree) to "5" (strongly agree). The exception related to children's responses concerning wishing that their parents would get back together. Here, ratings were reversed, so that "1" represented strong agreement and "5", strong

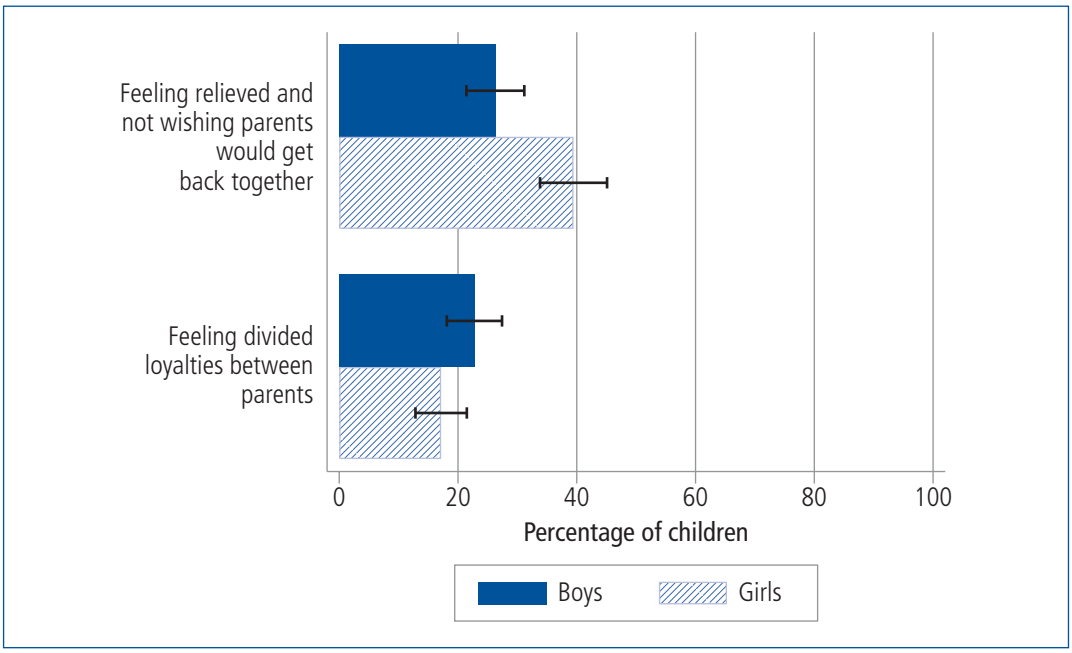
disagreement. Each child's average rating across the component items in each derived scale was then determined, resulting in scores ranging from 1.0 to 5.0 for each of the two derived scales. Higher scores on the first scale indicate a greater sense of relief and a lower desire for parents to get back together. Higher scores on the second scale, on the other hand, reflect a greater feeling of divided loyalties in relation to the parents.[10] The following results focus on the proportion of children with relatively high scores (ranging from 3.5–5.0) on the two derived scales.

It is worth noting that the item concerning children's level of agreement with the statement that their parents' separation was better for them or worse for them was not considered in the two scales for the following reasons: (a) this item was not presented to the children as part of the set of five items; and (b) the response options differed from those of the other statements. Given that the way in which the patterns of children's responses to this item varied according to the selected characteristics examined were largely consistent with those based on the first scale (concerning relief about parental separation), the results are not shown in the following discussion.

Children's views about their parents' separation, by child gender, care-time arrangements, and age at separation

This section examines the extent to which children's views varied according to their gender, care-time arrangements and age when their parents separated. Given that all the children were 12–13 years old, their age at parental separation was treated as a proxy for duration of parental separation.

Figure 2.3 summarises the results for boys and girls. Girls were more likely than boys to feel relieved about their parents' separation (with little desire for their parents to get back together) (39% vs 26%), while also seeming slightly less likely than boys to experience divided loyalties (17% vs 23%). However, the latter result did not reach statistical significance.

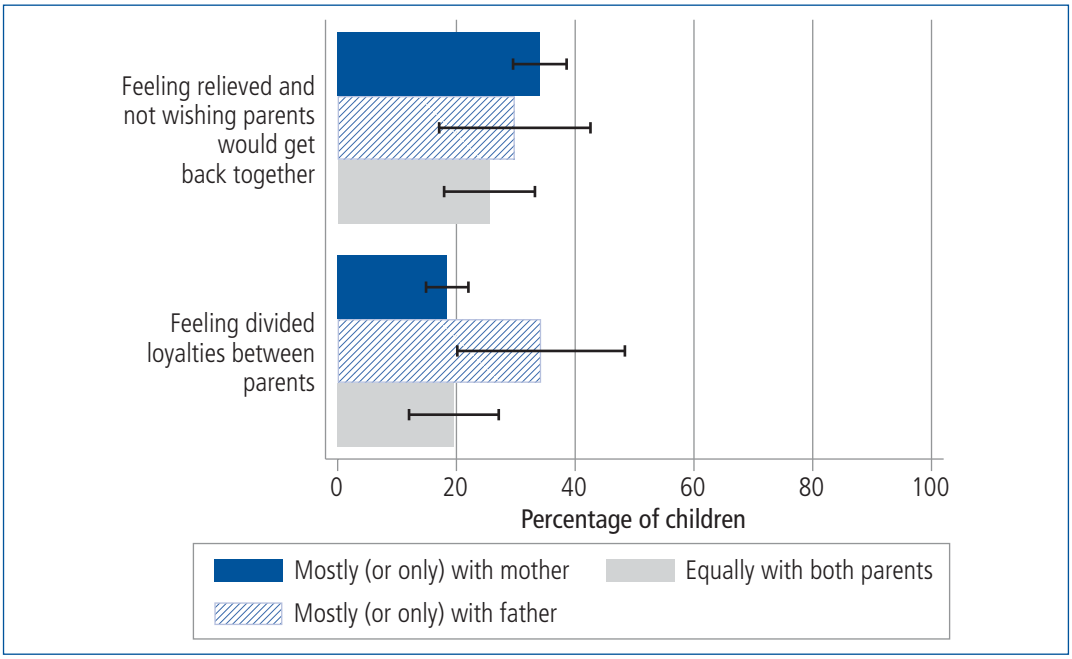


Notes: Sample sizes: boys, $n = 369$; girls, $n = 341$. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$. Scores ranged from 1.0–5.0, with scores of 3.5–5.0 here taken as reflecting agreement.

Figure 2.3: Proportions of children who felt relieved or had divided loyalties about their parents' separation, by child gender, K cohort, Wave 5

[10] The two scales have a reasonable level of internal consistency (Cronbach's alpha was .72 for the first scale and .66 for the second scale).

The extent to which children's views about their parents' separation varied according to their care-time arrangements, as described by the children, is summarised in Figure 2.4. Children were divided into three groups according to whether they indicated that they mostly/only lived with their mother or father or whether they lived for an equal time with both parents. Children who reported living mostly or only with their father were more likely than children in the other two care-time arrangements to indicate experiencing divided loyalties (34% vs 18–20%), while trends for children with the other two living arrangements were very similar. A higher proportion of children who lived mostly or only with their mother compared to those in the other two groups expressed feeling relieved about their parents' separation and not wishing that their parents would get back together (34% vs 26–30%), although this result was not statistically significant.



Notes: Sample sizes: with mother, *n* = 505; with father, n = 57; equally with both parents, n = 136. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$. Scores ranged from 1.0–5.0, with scores of 3.5–5.0 here taken as reflecting agreement.

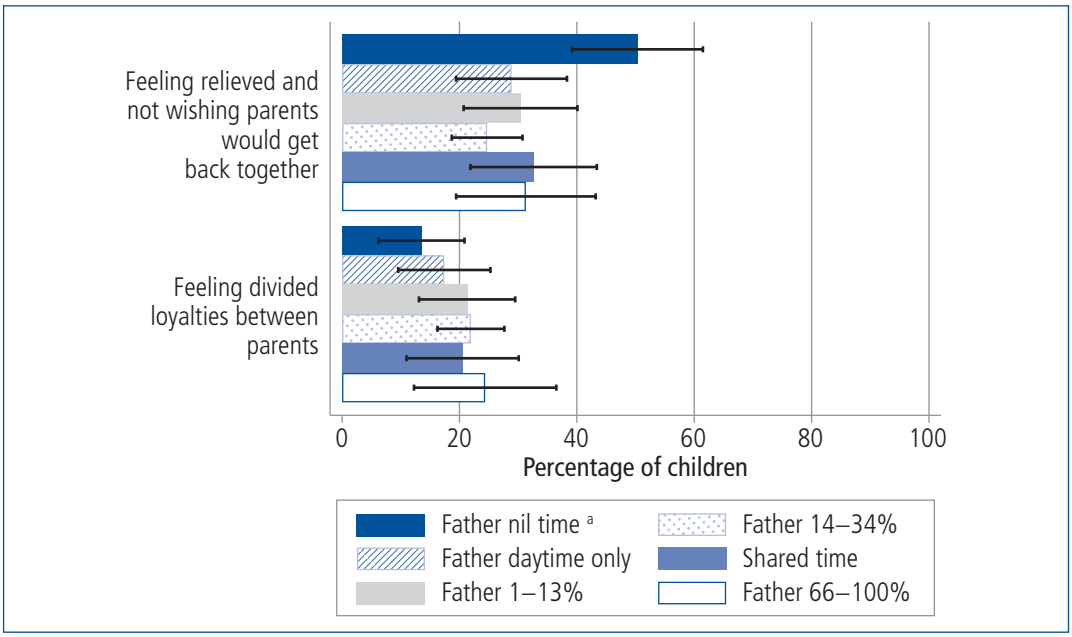
Figure 2.4: Proportions of children who felt relieved or had divided loyalties about their parents' separation, by children's reports of which parent they mostly lived with, K cohort, Wave 5

The views of children in the care-time arrangements identified on the basis of the resident parents' reports are presented in Figure 2.5 (on page 21). Children who had not seen their father in the previous 12 months were significantly more likely than children in other care-time arrangements to express relief about the separation, with little desire for parental reconciliation (50% vs 25–33%). Children who had not seen their father in the previous 12 months also seemed less likely than other children to experience divided loyalties, though the results were not statistically significant.

Figure 2.6 (on page 21) presents children's views on parental separation according to their age at the time their parents separated. Children's views on all three issues pertaining to parental separation did not vary significantly according to how old they were when their parents separated.

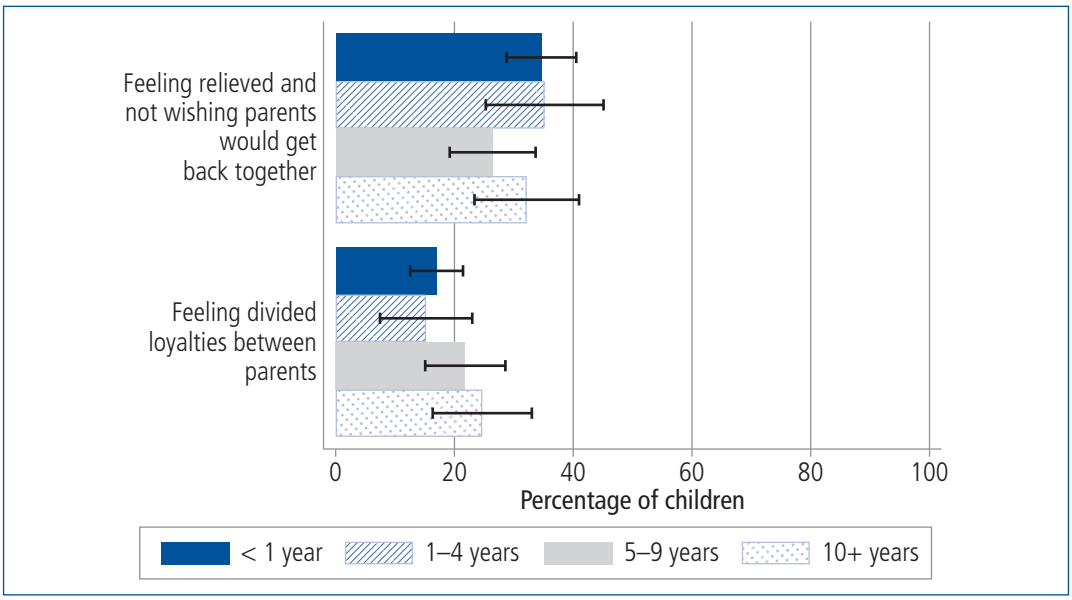
2.5 Children's perceptions of the quality of the inter-parental relationship

Regardless of whether their parents were living together or apart, all K cohort children were asked how they would best describe their parents' relationship. Five response options were provided: friendly, cooperative, distant, lots of conflict, and don't know. The children's responses are summarised in Table 2.1 (on page 22).



Notes: [a] "Father nil time" refers to seeing the child less than once a year or not at all, "shared time" refers to 35–65% of nights with each parent. Sample sizes: father nil time, *n* = 90–91; father daytime only, *n* = 106; father 1–13% nights, *n* = 112; father 14–34% nights; *n* = 225–226; shared time, *n* = 86; father 66–100% nights, *n* = 63. For each care-time group, numbers of children on which percentages were based may vary slightly due to non-response to individual items. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$. Scores ranged from 1.0–5.0, with scores of 3.5–5.0 here taken as reflecting agreement.

Figure 2.5: Proportions of children who felt relieved or had divided loyalties about their parents' separation, by care-time arrangements reported by their resident parent, K cohort, Wave 5



Notes: Sample sizes: < 1 year, *n* = 298 (including 36–38 children whose parents had never lived together or had separated before they were born); 1–4 years, *n* = 103; 5–9 years, *n* = 166; 10+ years, *n* = 126. For each group, numbers of children on which percentages were based may vary slightly due to refusals to individual items. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$. Scores ranged from 1.0–5.0, with scores of 3.5–5.0 here taken as reflecting agreement.

Figure 2.6: Proportions of children who felt relieved or had divided loyalties about their parents' separation, by their age at separation, K cohort, Wave 5

Table 2.1: Children's perceptions of the quality of the inter-parental relationship, by whether parents were separated or living together, K cohort, Wave 5

Inter-parental relationship	Parents had separated (%)	Parents lived together with child (%)
Friendly	25.1	63.0
Cooperative	22.1	22.3
Distant	18.9	1.7
Lots of conflict	15.8	1.6
Don't know	18.1	11.4
Total	100.0	100.0
No. of children	714	2,833

Note: A chi-square test was used to compare response distributions between the two groups of children (χ^2 (4, n = 3547) = 764.81; $p < .001$).

Of the children with a non-resident parent, nearly one-half (47%) described the relationship between their parents as either friendly or cooperative, with similar proportions reporting each of these options. On the other hand, 16% reported lots of conflict between their parents, 19% considered the relationship to be a distant one, and 18% expressed uncertainty. By contrast, the reports of children who were living with both (biological) parents tended to be much more positive,[11] with 63% describing the relationship between their parents as friendly and 22% as cooperative; that is, 85% provided either of these two favourable assessments. Few children who were living with both parents in the same home described the inter-parental relationship as distant or marked by conflict (these alternatives were each selected by less than 2% of the children). A slightly smaller proportion of children who were living with both parents than those with separated parents indicated uncertainty about the quality of their parents' relationship with each other (11% vs 18%).

Comparison of children's and parents' perceptions of the quality of the inter-parental relationship

Before comparing children's and parents' perceptions of the quality of the inter-parental relationship, the reports of resident and non-resident parents on this issue are outlined (Table 2.2). Separated parents were asked to indicate how well they got along with their child's other parent by selecting one of the following response options: very well, well, neither well nor poorly, poorly, very poorly/badly, or that they had no contact with the other parent. In the following discussion, reports of getting along very well or well are treated as descriptions of a favourable relationship, while reports of getting along poorly or very poorly/badly are classified as descriptions of an unfavourable relationship. The selection of "neither well nor poorly" is taken to reflect a neutral stance.

Regardless of their gender and residence status, parents were more likely to report a favourable than unfavourable relationship. Table 2.2 (on page 23) presents the assessments of all (separated) resident mothers in the sample focused on; and of the resident mothers and non-resident fathers in the "former couples" sample (where both parents of the same children were interviewed).[12] Of all resident mothers, 40% provided favourable assessments, 26% indicated a neutral stance, and 20% provided unfavourable assessments. The remainder said that they had no contact with their child's father. A similar overall pattern of assessments emerged for the resident mothers and non-resident fathers in the former couples sample: around one-half (49–54%) viewed their relationship favourably, less than one-quarter (22–23%) provided unfavourable assessments, and 20–26% saw the relationship in a neutral light. It is worth re-iterating here that parents living elsewhere who had had no contact with their child in the previous 12 months were not interviewed. Given that the former couple sample necessarily focuses exclusively on cases where both parents of the study children were interviewed, it is not surprising that few parents in this sample had no contact with each other (2–3%).

[11] As noted earlier, the term "parents" is used in this chapter to refer exclusively to "biological parents". Where children are described as "living with both parents", they and their biological parents were living in the one household.

[12] Trends for all resident fathers who were interviewed (n = 64) and of "former couples", comprising resident fathers and non-resident mothers who were both interviewed (n = 41), were not derived owing to the small number of parents represented.

Table 2.2: Reports by resident and non-resident parents of how well they get along, K cohort, Wave 5

How well resident and non-resident parents get along [a]	Separated resident mothers (%)	"Former couples" sample [b]	
		Resident mothers [c] (%)	Non-resident fathers (%)
Very well	12.3	15.6	14.7
Well	27.3	33.0	39.2
Neither well nor poorly	25.7	26.1	20.3
Poorly	9.2	11.2	12.0
Very poorly/badly	11.4	10.7	11.4
No contact with other parent	14.2	3.4	2.4
Total	100.0	100.0	100.0
No. of parents	621	351	351

Notes: [a] Resident and non-resident parents include those with shared care time. Parents who were classified as the primary carer of the study child in Wave 5 are here treated as resident parents, and parents who were classified as living elsewhere in Wave 5 are here treated as non-resident parents. No statistical test was used to compare responses of mothers and fathers of the "former couples" given that these responses were not independent. [b] Former couples are those where both parents of same child were interviewed. [c] These mothers form a subset of the "separated resident mothers" in the left-hand column.

Table 2.3 shows children's perceptions compared with their parents' perceptions of the quality of the inter-parental relationship. The upper panel of this table focuses on the reports of children and resident mothers (hereafter called "child–resident mother sample") and the lower panel outlines the reports of children and their non-resident fathers (hereafter called "child–non-resident father sample").[13] The precise question and response options provided to children and their parents differed considerably, and these differences may well reduce the level of correspondence of patterns of answers between the two generations.

Table 2.3: Parents' reports of how well they get along, by children's perceptions of the quality of the inter-parental relationship, K cohort, Wave 5

Parents' reports	Children's reports			
	Friendly/ cooperative (%)	Distant (%)	Lots of conflict (%)	Total (%)
Reports of resident mothers [a]				
Very well/well	36.2	5.6	1.1	43.0
Neither	14.1	7.4	3.2	24.7
Very poorly/poorly	5.1	5.4	10.1	20.6
No contact with other parent	3.0	4.7	4.0	11.7
Total	58.5	23.1	18.4	100.0
No. of observations	300	123	95	518
Reports of non-resident fathers [a]				
Very well/well	45.4	6.4	1.6	53.4
Neither	9.6	6.9	1.8	18.3
Very poorly/poorly	7.6	6.4	11.8	25.8
No contact with other parent	0.7	0.4	1.4	2.5
Total	63.2	20.2	16.6	100.0
No. of observations	194	67	50	311

Note: [a] Resident and non-resident parents include those in shared time; that is, parents who were interviewed as the primary carer of the study child in Wave 5 are here treated as resident parents, and parents who were interviewed as parents living elsewhere in Wave 5 are here treated as non-resident parents.

[13] Child–parent comparisons were not made where the children had a resident father and non-resident mother, given the relatively small number of such families.

As suggested in the above-mentioned related analyses, children and their resident mothers and non-resident fathers most commonly reported favourably on the parental relationship, though children's views were generally more positive than those of their resident parents. This can be seen by comparing the "Total" results in Table 2.3, which summarise the views of the children (the rows labelled "Total") and those of their resident mothers and fathers (the "Total" column).

In relation to the child–resident mother sample, 59% of children believed that their parents had a friendly or cooperative relationship, while 43% of the mothers reported that they got along well or very well with their child's father. Similar proportions of children and their mothers provided negative descriptions: 21% of mothers reported getting along poorly or very poorly/badly with the father and 18% of children considered the inter-parental relationship to entail lots of conflict. The proportion of mothers who said that they neither got along well nor badly was similar to the proportion of children who described the inter-parental relationship as distant (25% vs 23%). Of course, a distant relationship may be interpreted quite differently from one that reflects neither getting along well nor badly. Some mothers (12%) said that they had no contact with their child's father.

Regarding the child–non-resident father sample, a higher proportion of children than fathers considered the relationship to be favourable (63% vs 53%) and a lower proportion of children than fathers considered it to be unfavourable (children 17%; fathers 26%), with the remaining one in five children and a similar proportion of fathers describing the relationship as distant. A small proportion of fathers said they had no contact with their child's mother. Again, it should be kept in mind that fathers who had not seen the child in the past year were not interviewed.

The other percentages in Table 2.3 provide insight into the proportions of parent–child pairs who provided similar or dissimilar views. For example, the top panel shows that 36% of the child–resident mother sample provided favourable assessments (i.e., the mothers reported that they got on very well or well, while their child said that relations were friendly or cooperative). In 10% of cases, both mother and child described the relationship as unfavourable, and in 7%, the mothers indicated that they neither got along well nor poorly with the father, while the children characterised the relationship as distant. In other words, 54% of children and their mothers provided similar assessments of the relationship between the separated parents and 35% of children and their mothers provided dissimilar assessments.[14] Of the remaining 12%, mothers indicated no contact with the father while their children's reports were split between the three categories (friendly/cooperative, distant, lots of conflict) (with these assessments each provided by 3–5%).

The generally consistent descriptions of the quality of inter-parental relationship were also apparent when comparing the reports of children and their non-resident fathers. Specifically, 45% of those in the child–non-resident father sample provided a favourable description of the inter-parental relationship, 12% provided an unfavourable description and 7% indicated that the relationship was neither positive nor negative (the response option for fathers) or distant (the response option for children). Taken together, 64% of children and fathers provided similar assessments and 34% provided dissimilar views while the remainder represented cases where the father had no contact with the child's mother (applying to almost 3%).

Thus, both for the child–resident mother and child–non-resident father samples, the children's reports were largely consistent with those of their parents. Secondly, both children and parents most commonly considered the inter-parental relationship to be favourable.

Where children's perceptions were dissimilar to parents' own reports, children tended to provide the more positive picture. For example, in 19% of the child–resident mother sample, children described the relationship as friendly or cooperative, while their mother either indicated that the relationship was poor or that they got along neither well nor poorly. For 10% of the child–resident mother sample, the children provided a less favourable assessment of the relationship compared with their mother (i.e., where the child described the relationship as distant while their mother indicated that she and the father got along well or very well; or where the child reported much conflict and their mother provided a favourable assessment or indicated that they neither got along well nor poorly with the father).

[14] That said, we acknowledge that the "in-between" descriptions provided to parents and children (getting along neither well nor poorly vs having a distant relationship) can be interpreted quite differently. For example, a poor relationship may lead a person to develop a "cool/calm/distant stance" in order to avoid heated arguments.

Children's perceptions of the inter-parental relationship, by child gender, care-time arrangements, and age at separation

Children's assessments of their parents' relationship with each other did not vary significantly according to the children's gender or age at parental separation (based on four age-at-separation groups). However, the two groups of children whose parents had been separated when they were less than 5 years old (i.e., longer duration of parental separation) were less likely to describe their parents' relationship as marked by high conflict, compared with the two groups whose parents had been separated for a shorter duration (12–13% vs 20–23%) (see Table 2.4). In addition, although the children's assessments did not vary significantly with their personal reports of their living arrangements, their assessments varied according to their (more detailed) living arrangements, as reported by their parents.

Table 2.4: Children's perception of the inter-parental relationship, by selected characteristics, K cohort, Wave 5

	Friendly/ cooperative (%)	Distant (%)	Lots of conflict (%)	Don't know (%)	Total (%)	No. of children
Gender of child						
Boys	48.9	19.1	16.2	15.9	100.0	370
Girls	45.2	18.6	15.4	20.7	100.0	344
Children's report of their own living arrangements						
Mostly (or only) with mother	47.9	19.8	14.2	18.1	100.0	508
Mostly (or only) with father	45.9	10.5	21.4	22.3	100.0	57
Equally with both parents	48.6	19.0	16.8	15.7	100.0	137
Resident parents' reports of care-time arrangements						
Father nil time in the last 12 months	18.3	27.3	20.4	34.0	100.0	90
Father daytime only	53.2	13.8	9.6	23.4	100.0	107
Father 1–13% of nights (mother 87–99%)	58.1	19.4	13.1	9.4	100.0	114
Father 14–34% of nights (mother 66–86%)	53.9	18.7	14.3	13.0	100.0	226
Shared time (35–65% of nights with each parent)	52.8	19.1	22.8	5.3	100.0	86
Father 66–100% (mother 0–34% of nights)	47.8	12.2	14.2	25.7	100.0	63
Child's age at parental separation						
< 1 year old	48.0	19.6	12.2	20.3	100.0	301
1–4 years old	51.6	18.5	12.6	17.3	100.0	103
5–9 years old	48.0	18.3	20.1	13.6	100.0	166
10+ years old	39.8	18.7	22.7	18.7	100.0	127

Notes: Chi-square tests were used to compare responses of perceived inter-parental relationship by children's gender (χ^2 (3, n = 714) = 2.89; $p > .05$ not significant); by children's own report of living arrangements (χ^2 (6, n = 702) = 5.72; $p > .05$ not significant); by resident parents' reports of care-time arrangements (χ^2 (15, n = 686) = 69.35; $p < .001$); and by child's age at parental separation (χ^2 (9, n = 697) = 13.42; $p > .05$ not significant). Percentages may not total exactly 100.0% due to rounding.

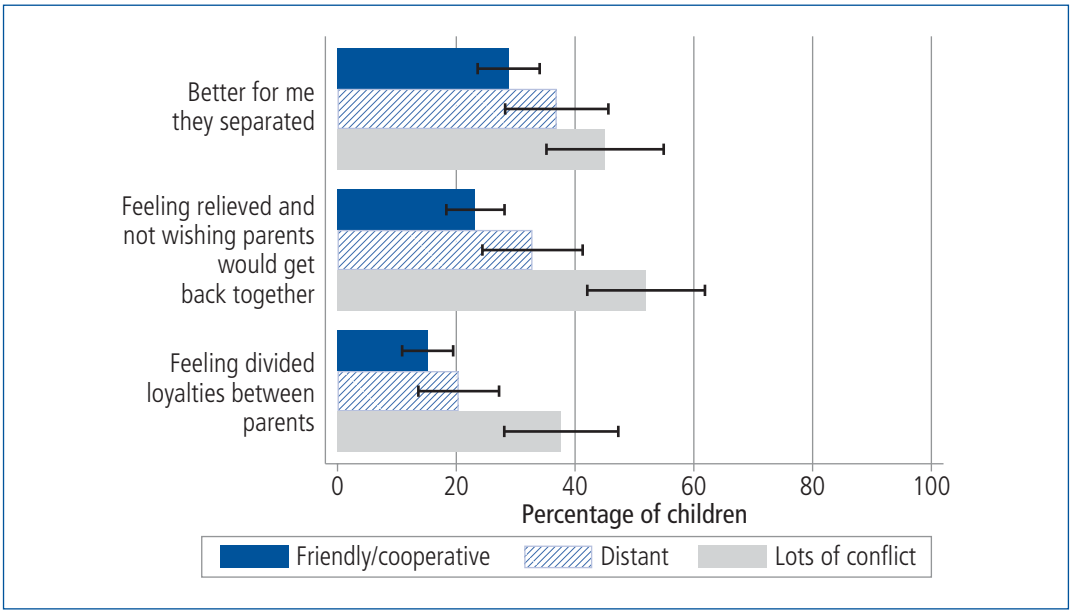
Table 2.4 shows that, compared with other children, those who had not seen their father during the previous 12 months were less likely to describe the relationship between their parents as friendly or cooperative (18% vs 48–58%) and more likely to describe it as distant (27% vs 12–19%) or to express uncertainty about the quality of the relationship (34% vs 5–26%). In addition, children in two of the six living arrangements—those who had not seen their father for the last 12 months, and those who experienced shared care time—were more likely than the other children to describe the relationship as marked by conflict (20% and 23% respectively). These results are fairly consistent with those based on the reports of parents in the Longitudinal Study of Separated Families where fathers never saw their child. Both fathers and mothers who reported these circumstances were

the most likely of all groups examined to describe their relationship as entailing much conflict or as fearful (Kaspiew et al., 2009).

As indicated above, one-third of children who had not seen their father in the previous 12 months said that they did not know how to describe the relationship between their parents. These children were the most likely of all children to state this. This is not surprising, given the limited opportunity they would have had to observe or read how their parents got along with each other. Around one-quarter of children who spent time with their father in the daytime only and those who spent the majority of nights (66–100%) with their father also expressed uncertainty about the quality of the relationship between their parents. Children with shared care time were least likely to express uncertainty about this matter (5%).

Children's perception of the inter-parental relationship and views about their parents' separation

Children's views on their parents' separation (outlined in section 2.4) are likely to be strongly influenced by their perceptions of how well their parents were getting along with each other. Although it is not possible to explore causal connections in the present analyses, the results depicted in Figure 2.7 suggest that these views were linked in the expected direction. The greatest contrast in patterns of views about the separation emerged for those who described the inter-parental relationship in favourable or unfavourable terms (rather than as distant).



Notes: Sample sizes: friendly/cooperative, n = 334–337; distant, n = 140–141; lots of conflict, n = 141. Confidence intervals are shown by the horizontal line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$. The latter two measures represent scores on derived scales, ranging from 1.0 to 5.0. Scores of 3.5–5.0 are here taken to reflect agreement.

Figure 2.7: Proportions of children who felt better, relieved or had divided loyalties about their parents' separation, by their perception of the inter-parental relationship, K cohort, Wave 5

Children who believed that their parents' relationship entailed much conflict were more likely than those who perceived their parents' relationship as friendly or cooperative to believe that their parents' separation was better for them than the alternative (45% vs 29%). In addition, the former group of children were more likely than both of the other groups to feel relieved about the separation (with little desire for parental reconciliation) (52% vs 23–33%) and to experience divided loyalties (38% vs 15–20%).

2.6 Children's perceptions of their role in making decisions about their living arrangements

A component of the Australian Institute of Family Studies (AIFS) 2009 evaluation of the 2006 family law reforms was a survey of around 700 Australian adolescents aged 12–18 years whose parents had separated after July 2006. Drawing upon the data from this survey, Lodge and Alexander (2010) reported that 63% of the adolescent participants said that they had wanted to have a say in the decision about who they would live with and 70% of all adolescents believed they had input into this decision. Similarly, two other Australian studies (Cashmore & Parkinson, 2008; Parkinson et al., 2005) reported that at least one-half of the children studied had some say about their living and contact arrangements after parental separation.[15]

Similar questions were asked of the LSAC children in the K cohort with a parent living elsewhere. Specifically, children were asked: (a) Have you had a say in any of the decisions about who you would live with?; and (b) Did you want to have a say about who you would live with?

Taken together, the results in Table 2.5 show that over one-half (56%) of the children reported that they had wanted to have a say in the decision about who they would live with, and a slightly lower proportion (49%) said that they did have a say on their living arrangements. One-fifth did not want to provide input (20%), while a higher proportion (28%) believed that they did not have a say. Just under one-quarter (24%) were unsure whether they had wanted to have a say, and a similar proportion (23%) did not know whether they actually had a say. Taken separately, of those with a view on whether they wanted a say (other than uncertainty), 73% answered in the affirmative, and of those with a view on whether they did have say, 64% reported that they had done so—proportions that are similar to those reported by Lodge and Alexander (2010; based on a sample that included older adolescents).

Table 2.5: Children's reports of whether they wanted to or did have a say about their living arrangements, K cohort, Wave 5

Did you want to have a say about who you would live with?	Have you had a say in any of the decisions about who you would live with?			
	Yes (%)	No (%)	Don't know (%)	Total (%)
Yes	39.4	12.0	4.5	55.9
No	5.3	10.1	4.9	20.3
Don't know	4.7	5.6	13.5	23.8
Total	49.4	27.8	22.8	100.0
No. of children	356	202	158	716

Table 2.5 also shows that: around four in ten children (39%) both wanted to have and believed they did have a say (the most common of all nine scenarios); 12% wanted to have but felt they had not had a say; 10% neither wanted to have nor believed they did have a say; and 5% said that they did have a say, despite not wanting to do so. However, the second most common scenario, applying to one-third of the children, was that children were unsure about one or both of these issues.

Children's views about having input into care-time arrangements, by child gender, type of arrangement, and age at separation

For succinctness, this section focuses exclusively on factors relating to whether children reported that they wanted a say in their living arrangements and whether they believed that they did have a say. Table 2.6 (on page 28) shows the proportion of children who responded affirmatively to each question according to their gender, living arrangements and age at parental separation. The analyses were run separately for both issues: desire to have a say and beliefs about doing so.

[15] The study by Cashmore and Parkinson (2008) was a qualitative study of 47 children aged 6–18 years; the study by Parkinson et al. (2005) was based on data from an AIFS survey of 60 young people aged 12–19 years, conducted in 1997 as part of the Australian Divorce Transitions Study.

Table 2.6: Proportions of children who wanted to or did have a say about their living arrangements, by selected characteristics, K cohort, Wave 5

Selected characteristics	Wanted to have a say (%)	Had a say (%)	No. of children
Gender of child	ns	ns	
Boys	54.5	51.1	371
Girls	57.4	47.6	346
Children's report of their own living arrangements	*	**	
Mostly (or only) with mother	53.8	46.4	511
Mostly (or only) with father	72.3	71.6	57
Equally with both parents	54.2	51.6	137
Care-time arrangements, resident parents' reports	*	***	
Father nil time in the last 12 months	55.8	48.8	91
Father daytime only	53.3	46.6	107
Father 1–13% of nights (mother 87–99%)	55.0	44.8	114
Father 14–34% of nights (mother 66–86%)	51.3	44.5	227
Shared time (35–65% of nights with each parent)	66.7	58.2	86
Father 66–100% of nights (mother 0–34% of nights)	68.1	69.0	63
Child's age at parental separation	ns	ns	
< 1 year	54.8	49.7	303
1–4 years	47.8	41.4	103
5–9 years	60.0	53.2	167
10+ years	60.2	53.9	127

Note: Chi-square tests were used to assess the relationship between each issue taken separately (whether wanted a say and whether did have a say) and each variable (e.g., children's gender). * $p < .05$; ** $p < .01$; *** $p < .001$; ns = not significant).

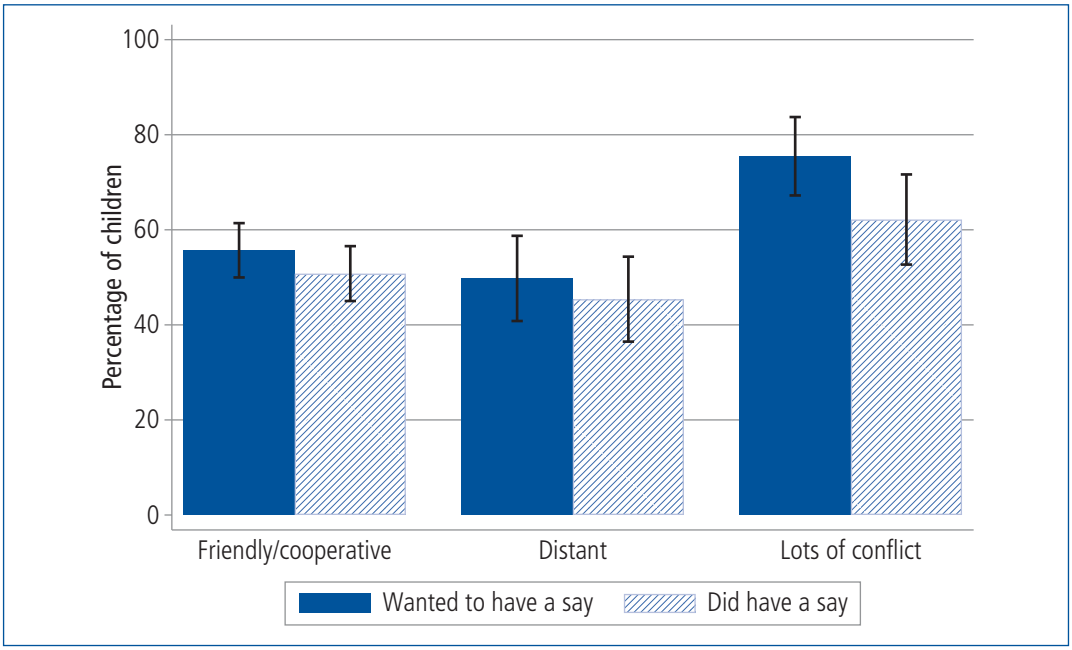
It should be noted that many children of separated families experience a change in living arrangements during the years following separation (see Qu & Weston, 2014). Children's desire to have an input into their living arrangements and any opportunities for having an input may have occurred during the separation period and/or months or years later, with the desire and opportunity not necessarily occurring during the same period.

Neither the desire to have input into these decisions, nor the belief that they had done so, varied significantly according to the children's gender or age at the time their parents had separated. Both issues about having a say were linked with their care-time arrangements. Compared with children who either reported that they lived equally with both parents or mostly or only with their mother, those who reported that they mostly or only lived with their father were more likely to have indicated that they had wanted a say in the decision and that they had done so. Specifically, 72% of those who said they spent most or all nights with their father wanted a say and 72% believed that they did have a say; 54% of those reporting other arrangements indicated that they had wanted a say and 46–52% reporting such arrangements said that they did have a say.

A mostly similar pattern of results emerged when the children's living arrangements were based on the resident parents' reports. Compared with children who, according to their resident parent, spent most or all nights with their mother, those in the care of their father for most or all nights were more likely to indicate that they had wanted a say (68% vs 51–56%) and to indicate that they did have a say (69% vs 45–49%). However, those with shared care time were also more likely than those who spent most or all nights with their mother to indicate that they had wanted a say (67% vs 51–56%) and to report that they did have a say (58% vs 45–49%). These results relating to shared care time differ from those based on children's reports of their living arrangements: the proportions of children wanting and having a say did not vary significantly according to whether they said that they lived mostly or only with their mother or equally with each parent.

Children's perception of the quality of the inter-parental relationship and their role in making decisions about their living arrangements

Children's desire to participate in decisions about their living arrangements and their beliefs about their actual participation were associated with their perceptions of the quality of their parents' relationship, as shown in Figure 2.8. Children who described their parents' relationship as marked by conflict were more likely than those who said that their parents had a distant or friendly/cooperative relationship to report that they had wanted to have a say (75% vs 50–57%) and to indicate that they did have a say (62% vs 45–51%). This result is consistent with the finding from Parkinson et al. (2005) that young people who reported many arguments between their parents were more likely to have had some say compared with those who reported few or no arguments between their parents. This theme also emerged in the qualitative study by Cashmore and Parkinson (2008). Section 2.5 of this chapter showed that children who considered their parents' relationship to entail much conflict were also more likely than other children to report feeling "caught" between parents in the sense of finding it difficult to talk to one parent about the other and to be fair to both parents. Possibly, negative inter-parental relationships and feeling caught between their parents increased the likelihood of children wanting to have a say about their living arrangements (or changing their living arrangements).



Notes: Sample sizes: friendly/cooperative, $n = 337$; distant, $n = 141$; lots of conflict, $n = 115$. Confidence intervals are shown by the vertical line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the values are statistically significantly different at $p < .05$.

Figure 2.8: Proportions of children who wanted to or did have a say about their living arrangements, by perceived quality of inter-parental relationship, K cohort, Wave 5

2.7 Children's views about the time spent with their non-resident parent

In Wave 5 of LSAC, the K cohort children were asked whether they were able to see their non-resident parent when they wanted to, by selecting from the response options: always, sometimes, occasionally, never, and "I don't want to see him/her". This was followed by a question about whether they thought the amount of time they spent with this parent was: nowhere near enough, not quite enough, about right, a little too much, or way too much.

Table 2.7 summarises children's responses according to the gender of their non-resident parent. The most common response to the question about whether they were able to see their non-resident parent when they wanted to was "always" (36%), followed by "sometimes" (24%) and "occasionally" (22%). The least common was "never" (8%). It is worth noting that 10% of children said that they did not want to see this parent at all. The patterns of children's responses were broadly similar whether it was their mother or their father who lived elsewhere.

Regarding their views on the overall amount of time they spent with their non-resident parent, the most common response was that the amount of time was "about right" (44%), followed by "not quite enough" (30%) and "nowhere near enough" (21%). That is, one-half of the children did not feel that they had sufficient time with their non-resident parent. Only small proportions of children reported that they spent "a little too much" or "way too much" time with this parent (6% combined). Again, children's views on this issue did not vary significantly according to which of their parents lived elsewhere.

Table 2.7: Children's reports about whether they were able to see their non-resident parent when they wished and for enough time, K cohort, Wave 5

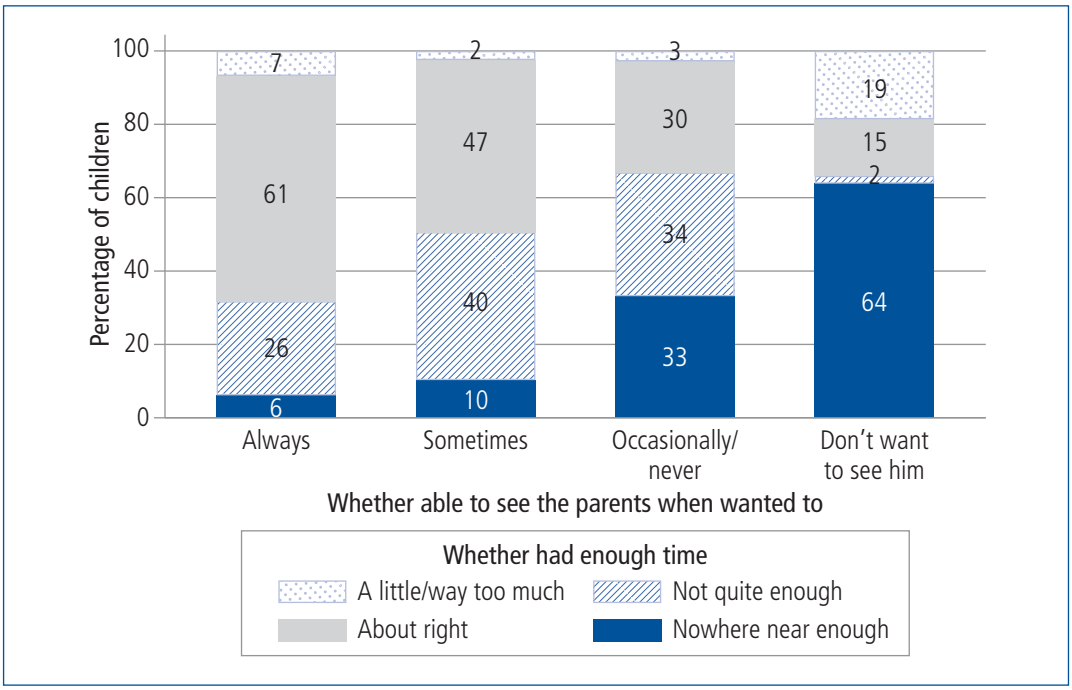
Responses	Gender of non-resident parent		All non-resident parents (%)
	Father (%)	Mother (%)	
Whether able to see non-resident parent when wanted			
Always	35.9	39.2	36.2
Sometimes	22.4	33.4	23.5
Occasionally	23.0	16.2	22.4
Never	8.1	5.7	7.9
I don't want to see him/her	10.6	5.6	10.1
Total	100.0	100.0	100.0
No. of children	650	67	717
Whether amount of time spent with non-resident parent was enough			
Nowhere near enough	21.2	19.1	21.0
Not quite enough	29.1	33.1	29.5
About right	43.9	43.0	43.8
A little too much	3.7	1.1	3.4
Way too much	2.1	3.8	2.3
Total	100.0	100.0	100.0
No. of children	645	67	712

Notes: Based on chi-square tests, there is no statistically significant association between children's reports on these two issues (taken separately) and the gender of non-resident parents. Percentages may not total 100.0% exactly due to rounding.

Children's views about the time spent with their non-resident father and ability to see him when they wished

Not surprisingly, Figure 2.9 (on page 31) shows that where the children's fathers lived elsewhere from the primary carer (the most common arrangement after parental separation), children's views on the amount of time they spent with him varied significantly according to whether they were able to see their father when they wished.[16] However, some of the results may at first seem counter-intuitive. Nearly two-thirds of the children who did *not* want to see their father at all reported that the amount of time spent with him was nowhere near enough, compared with 6–33% of other children. Further analysis reveals that most of the children (nearly two-thirds) who did not want to see their father had not seen him in the previous 12 months (and the remaining one-third either saw him during the daytime only or spent 1–13% of nights with him). Many of the children who neither wanted to see their father nor had seen him in the previous 12 months may have considered it nonetheless obvious their time spent with their father must be far from adequate.

[16] The number of children whose mother lived elsewhere was too small to allow assessment of links between the views of children experiencing this arrangement and these various factors.



Note: Sample sizes: always, *n* = 232; sometimes, *n* = 151; occasionally/never, *n* = 201; don't want to see him, *n* = 61.

Figure 2.9: Children's reports about the time spent with their non-resident father, by whether they were able to see him when they wanted to, K cohort, Wave 5

Figure 2.9 shows that most of the children who felt that they were always able to see their father when they wished reported that their time with their father was about right (61%). Such a judgement was also reported by 47% of children who felt they were sometimes able to see their father when they wanted to, and by 30% of those who said that they were never or only occasionally able to see their father when they wished. Similar proportions of children who were sometimes able to see their father when they wanted to judged their time with him to be not quite enough or about right (40% and 47% respectively). In addition, much the same proportions of children who felt that they were never, or only occasionally, able to see their father when they wished judged their time with their father to be nowhere near enough, not quite enough or about right.

Whereas one in five children who did not want to see their father said that their time with him was a little or way too much, only 2–7% of children in the other three groups judged their time with their father to be excessive.

Children's views about the time spent with their non-resident father by child gender, care-time arrangements, and age at separation

Table 2.8 (on page 32) presents the proportions of children who believed that they were always able to see their non-resident father when they wished and the proportions of children who reported having nowhere near enough time with him, according to selected characteristics.

A higher proportion of girls than boys reported that they were always able to see their father when they wanted to (42% vs 30%), but similar proportions (20–23%) reported that the amount of time with him was nowhere near enough.

It is not surprising that children's ability to see their father when they wished and the belief that they had nowhere near enough time with him were linked with their care-time arrangements, as reported by the children themselves and by their resident mothers (including those with shared time). Compared with children who said that they were living equally with both parents, those who said that they were mostly or only living with their mother were less likely to indicate that they were always able to see their father when they wanted to (32% vs 52%) and more likely to say that they had nowhere near enough time with him (24% vs 10%).

Table 2.8: Proportions of children who reported they were able to see their non-resident father always or not enough, by selected characteristics, K cohort, Wave 5

Selected characteristics	Always able to see father (%)	Nowhere near enough time with father (%)	No. of children [a]
Gender of child	**	ns	
Boys	30.3	20.1	334
Girls	42.1	22.8	317
Children's report of their own living arrangements	***	***	
Mostly (or only) with mum	32.0	24.1	509
Equally with both parents	51.9	9.6	123
Care-time arrangements, resident parents' reports	***	**	
Father nil time in the last 12 months	7.5	60.6	92
Father daytime only	38.0	19.5	107
Father 1–13% of nights (mother 87–99%)	29.0	18.5	114
Father 14–34% of nights (mother 66–86%)	45.9	10.5	226
Shared time	59.8	3.3	69
Child's age at parental separation	ns	*	
< 1 year	32.2	26.5	287
1–4 years	41.6	20.3	88
5–9 years	35.4	16.7	150
10+ years	43.2	12.6	112

Notes: [a] No. of children refers to the sample sizes for the column "Always able to see father". Chi-square tests were used to identify the strength of associations between each variable (e.g., children's gender) and children's views on: (a) whether they were always able to see father; and (b) whether they had nowhere near enough time with him. * $p < .05$; ** $p < .01$; *** $p < .001$; ns = not significant.

The link between views on these two issues and care-time arrangements was even more apparent when the more detailed measure of care-time arrangements (i.e., those reported by the mothers) were focused on. Children in shared time were the most likely of all care-time groups to report that they were always able to see their father when they wanted to (60%), and the least likely to say that they spent nowhere near enough time with him (3%). In addition, children who spent 14–34% of nights with their father (the arrangement in Table 2.8 that was closest to shared care time) were the second most likely to report that they were always able to see their father on time (46%), and the second least likely to believe that they spent nowhere near enough time with him (11%).

On the other hand, those who had not seen their father within the previous 12 months were the least likely to report that they were always able to see their father when they so wished (8%) and the most likely to report that they spent nowhere near enough time with him (61%).

Further analysis indicated that a large proportion of children who had not seen their father within the previous 12 months said that they did not want to see him (45%) and a similar proportion (43%) reported being occasionally or never able to see him when they wanted to. (These results are not presented in Table 2.8.)

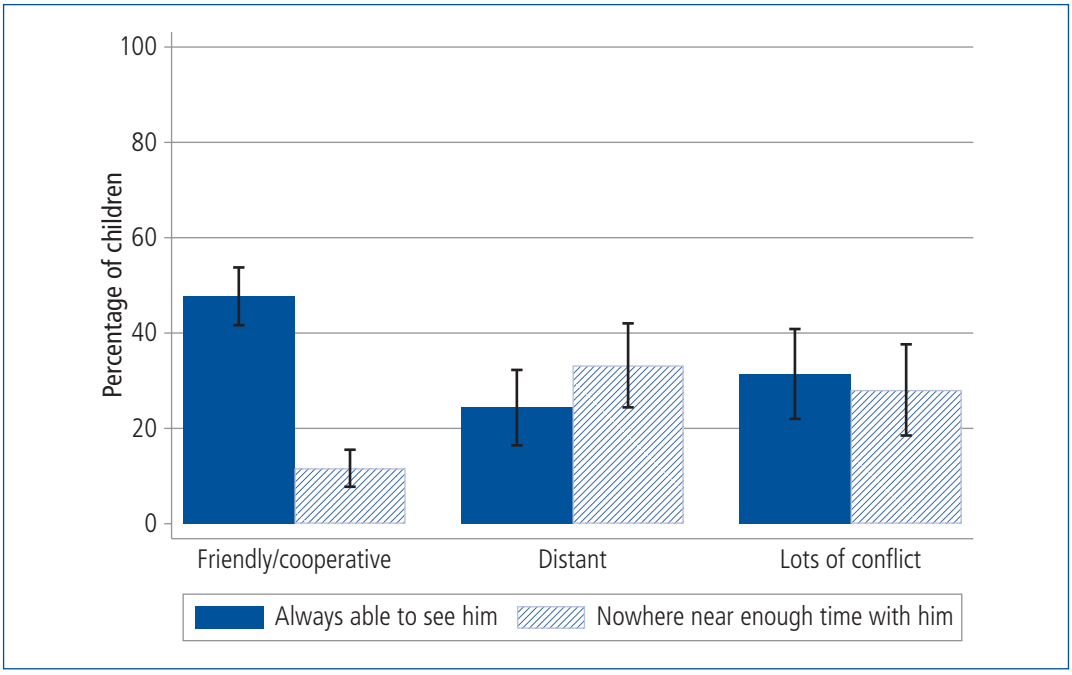
Children's views on whether they were able to see their father when they wished did not vary significantly according to the child's age at separation. Nevertheless, children who were younger when their parents had separated were more likely to say that the amount of time with him was nowhere near enough. However, these differences disappeared once parents' reports on the children's care-time arrangements were controlled (results not shown here).

Children's views about the time spent with their non-resident father and their perceptions of the inter-parental relationship

As expected, children's views on whether they were always able to see their father when they wished and whether they had enough time with him varied with their perceptions of the quality of

their parents' relationship. Figure 2.10 shows that those who described their parents' relationship as friendly or cooperative were more likely than others to feel that they were always able to see their father when they wanted to (48% vs 24–31%) and thus, unsurprisingly, less likely to feel that they spent nowhere near enough time with him (12% vs 28–33%).[17]

It is worth noting, however, that nearly one-fifth of the children who described their parents' relationship as entailing a great deal of conflict said that they did not want to see their father, compared with one-tenth of children who described the inter-parental relationship as distant, and even fewer (2%) who considered the relationship to be friendly or cooperative (results not shown in Figure 2.10).



Notes: Sample sizes: friendly/cooperative, $n = 304$; distant, $n = 132$; lots of conflict, $n = 104$. Confidence intervals are shown by the vertical line extending beyond each bar. A lack of overlap in the confidence intervals for comparison groups (or slight overlap—see note [a] in Figure 2.2) indicates that the differences in values are statistically significant at $p < .05$.

Figure 2.10: Proportions of children who reported they were able to see their non-resident father always or not enough, by perceived quality of inter-parental relationship, K cohort, Wave 5

2.8 Summary

There is a growing recognition of the importance of seeking children's perspectives on matters that concern them. Parents' interpretations of their children's understanding of the separation and feelings about it do not necessarily correspond with children's accounts. This chapter focuses almost exclusively on the perspectives of children whose parents were separated. It examines: (a) their feelings about parental separation; (b) their interpretation of the quality of the relationship between their parents; (c) their preferences and perceived opportunities regarding having a say in their living arrangements; and (d) their views about the time they spent with their non-resident parent.[18]

[17] These differences continued to hold after controlling for other characteristics (children's age and gender, detailed care-time arrangements, and age at parental separation) (results not shown).

[18] As explained earlier in this chapter, parents who were identified as living with the child and knowing the child best are identified in LSAC as the primary parents. In this chapter, a separated primary parent is called the resident parent, while the child's other parent is called the non-resident parent, even though in some of these families, the study child experienced a shared care-time arrangement (where the child was spending 35–65% of nights per year with each parent).

Children's feelings about parental separation

Overall, children were more likely to *disagree* than agree with the statements that they: felt relieved that their parents had separated, wished their parents would get back together, felt split or torn between their parents, or felt that they could not talk about one parent to the other. On the other hand, they were more likely to *agree* than disagree with the statement that they found it hard to be fair to both parents.

Nevertheless, substantial minorities of children provided the alternative views to those outlined above. For example, around one in five children indicated that their parents' separation provided them with a sense of relief, and more than one in four wished their parents would get back together.

An additional question sought children's views on whether their parents' separation was better for them or whether they would have been better off had their parents stayed together. The children were nearly twice as likely to indicate that the separation was better for them than to say that they would have been better off had their parents stayed together. However, nearly one-half gave a neutral response, indicating that they neither agreed or disagreed that they would have been better off. The high uncertainty rate about this issue (expressed by two in five children) is not surprising given that the parents of many of the children in this sample had separated when the children were very young.

In general, however, views about parental separation did not vary significantly with children's age at parental separation or gender. Nevertheless, girls were more likely than boys to feel relieved about their parents' separation (with little if any desire for their parents to get back together). There were also no clear and consistent associations between children's views about parental separation and their care-time arrangements, where they spent at least some time with their father. Those who had not seen their father in the previous 12 months were the most likely to indicate feeling relieved, and with little if any wish for their parents to get back together.

In many cases where relief about parental separation was expressed, such relief may have resulted from the child being removed from everyday family dynamics that were highly dysfunctional. Subsequent analysis indicated that the children who had not seen their father within the previous 12 months tended to provide less favourable views about the quality of their parents' relationship than other children.[19]

Children's perceptions of the inter-parental relationship

While the LSAC children with separated parents most commonly provided a positive picture of their parents' relationship (nearly one-half reported that their parents had a friendly or cooperative relationship), their reports were much less likely to be positive than those provided by LSAC children whose parents had not separated.

The analyses also compared children's perceptions of the quality of their parents' relationship with their parents' own reports. Children's perceptions were more often similar to, than different from, those of their parents, and where differences emerged, children tended to provide the more positive picture. Possibly, some children were not as astute as others about their parents' relationship dynamics, or some parents who were not getting along very well were able to hide this from their children.

Children's views about their parents' separation are likely to be strongly influenced by any recollections they have about their pre-separation home environments and by their perceptions of their post-separation circumstances, including their views about the quality of their parents' relationship. Indeed, children who described their parents' current relationship as being marked by considerable conflict were more likely than other children to feel that they were "caught" between their parents.

[19] It was not possible in this chapter to examine the views of the LSAC children who had had little or no time with their mother due to the small number of children experiencing this situation.

Children's perceptions of their role in making decisions about their living arrangements

Over one-half of all children reported that they had wanted to have a say in the decision about who they would live with, and the remainder were evenly split between not wanting to have a say and being unsure. In addition, nearly one-half reported that they did have a say on their living arrangements. These findings were similar to those of some previous Australian studies (Cashmore & Parkinson, 2008; Lodge & Alexander, 2010; Parkinson et al., 2005). Children who spent the majority of nights with their father were the most likely, or among the most likely, to indicate that they wanted a say and that they did have a say in their living arrangements. In addition, children who described their parents' relationship as entailing a great deal of conflict were more likely than other children to have wanted to have a say and to believe that they had done so. This link between children's views about having a say and the quality of inter-parental relationship is consistent with previous research (Cashmore & Parkinson, 2008; Parkinson et al., 2005). While it is possible that many of these children wanted to have a say so that they could avoid witnessing acrimonious conflict between their parents, Cashmore and Parkinson (2008) found that compared to other children, those whose parents had a problematic relationship with each other, such as high conflict or violence, were less concerned that voicing their views would put them in a difficult position. Cashmore and Parkinson also found that children wanted it to be acknowledged that such issues concerned their lives and that they should therefore be able to make some contribution to the decision-making process.

Children's views about the time spent with their non-resident parent

This chapter also explored children's views about the amount of time they spent with their non-resident parent and whether they were able to see this parent when they wished. Over one-third of children said that they were always able to see their non-resident parent when they wished, while nearly one in ten said they were never able to do so, and one in ten said that they did not want to see this parent.

One-half of the children said that the amount of time with their non-resident parent was either nowhere near enough or not quite enough. The remainder mostly indicated that the amount of time with their non-resident parent was about right. Few children described this time as a little too much or way too much. Unsurprisingly, the majority of children who had not seen their father within the previous 12 months felt that they had nowhere near enough time with him.

Children's preferences on this issue were related in ways that could be expected to their perceptions of the quality of their parents' relationship. Compared with those who described this relationship as distant or marked by conflict, children who considered the relationship to be friendly or cooperative were more likely to say that they could always see their father when they wanted to and were thus less likely to indicate that they spent nowhere near enough time with him. Similarly, Parkinson and colleagues (2005) also found that compared with other children, those whose parents argued a great deal were more likely to indicate that they were not able to see their non-resident parents when they wanted to.

Data limitations

The results in this chapter should be interpreted with some caution given limitations inherent in the data. Firstly, some children with a parent living elsewhere did not complete the questions on parental separation. These children were more likely than those who answered the questions to have not seen their father in the previous 12 months[20] and to have either experienced parental separation when they were very young or never lived together with both parents. Secondly, non-resident parents who spent no face-to-face time with their study child were not interviewed, and were therefore not represented in the analyses of parents' reports.

[20] Note that for nine in ten children whose parents were separated, the mother had been identified in LSAC as the primary caregiver, while the father lived elsewhere.

Final comments

This chapter shows that children's views about parental separation are diverse. Consistent with prior research, the results suggest that the children (in this case aged 12–13 years) tended to be aware about their parents' relationship and were able to report on how they felt about their parents' separation. Most also wanted to have a say in their living arrangements, almost half believed that they did have a say (regardless of whether they wanted it), and around two in five both wanted a say and believed that they had been given this opportunity.

Children's views about their parents' separation, their perceptions of the quality of their parents' relationship, and their views about having a say in decisions on their living arrangements were linked with each other in some ways. Home environments before parental separation were likely to have been unpleasant for many of the children. However, life after parental separation did not appear to be easy for some in terms of relationship dynamics among both the parents and children. Some parents themselves described their inter-parental relationship unfavourably. It is not surprising, then, that a substantial minority of children felt "caught" between their parents or had divided loyalties, which was especially likely when they described their parents' relationship as entailing a great deal of conflict.

These findings are a reminder to separated parents of the difficulties their children can face when the parents themselves remain locked in acrimonious conflict. The encouragement of parents to put aside their conflict and focus on their children was one of the key aims of the 2006 family law reforms. Indeed, the results reinforce the importance of two of the central aims of the reforms: to help build strong healthy relationships and prevent separation, and to help separated parents agree on what is best for their children (rather than litigating). To be consistent with Article 12 of the Convention of the Rights of the Child, the process in reaching such agreement should ensure that the right of children to freely express their views on matters that affect them is upheld and that such views are taken into account.

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Gender role attitudes within couples, and parents' time in paid work, child care and housework

3

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3.1 Introduction

The allocation of Australian parents' time to paid and unpaid work remains very gendered, with fathers usually in full-time paid employment, and mothers often employed part-time or not in employment (Baxter, 2013). Mothers also spend more time than fathers doing household work, whether that is child care or other domestic work (Craig & Mullan, 2011). Even when mothers work full-time, when there are young children in the family, mothers tend to do more of the child care and other domestic work than fathers, and gender differences such as these are apparent across many developed countries (e.g., Coltrane, 2000; Craig & Mullan, 2011; Davis & Greenstein, 2009; Hook, 2006; Sayer, 2005; Shelton & John, 1996).

These different time-use patterns are likely to be linked with gender role attitudes towards work and family and towards the distribution of household work. The focus of this chapter is on exploring gender role attitudes among Australian parents. A significant contribution of this research is being able to undertake couple-level analyses of gender role attitudes for a large sample of parents, and also being able to explore associations with each parent's time use and assessments of fairness in the ways they share child care and household work. By exploring these associations, this research provides insights on the degree to which the gendered patterns of parental time use in Australia might be related to gendered perceptions of parents' roles within the family.

The evidence to date is that although there has been considerable change in terms of attitudes toward women being employed, there is still a diversity of views concerning the division of household work (Coltrane, 2000). For example, in a survey of Australian households in 2005, a significant proportion of Australian men and women agreed that "it is better for the family if the husband is the principal breadwinner outside the home and the wife has primary responsibility for the home and children" (41% of men and 36% of women agreed with this) (Van Egmond, Baxter, Buchler, & Western, 2010). However, a majority of the men and women agreed that household work should be shared equally when both parents work. Such findings have also been observed in other studies (e.g., Coltrane, 2000).

Research from Australia and elsewhere shows that gender role attitudes vary with a number of personal and family characteristics. For example, men tend to have more conservative attitudes than women, and variation has been observed according to characteristics such as educational attainment, ethnicity, religion, employment, life stage and family composition (see Coltrane, 2000; Davis & Greenstein, 2009; Van Egmond et al., 2010).

The findings noted above that most men and women think household work should be shared equally if both parents work is somewhat at odds with the way in which household work is actually divided in many Australian families. To some extent this may be a reflection of the high rate of part-time work by mothers in Australia. This part-time work can be a compromise for those who have more traditional gender role attitudes but also wish or need to be employed. Previous research has highlighted that individuals' gender role attitudes and behaviours may not be consistent (Schober & Scott, 2012). In the case of maternal employment, this may be a reflection of mothers' constrained employment choices, such that mothers may not always be able to engage in the labour force the way in which they would like (Himmelweit & Sigala, 2004; McRae, 2003). Of course, there are many

likely influences on women and on families when it comes to negotiating employment and care of children, and gender role attitudes are only part of this picture.

Despite the inequities in patterns of time use, mothers in Australia and elsewhere often report that the distribution of household tasks is fair (Baxter & Western, 1997; Blair, 1998; Thompson, 1991; Wilkie, Ferree, & Ratcliff, 1998). This may reflect that the unequal distributions of time spent on paid and unpaid work may be part of the negotiated way in which parents manage their paid and unpaid work tasks. Mothers and fathers appear to equate a "fair" division of child care or other domestic work to being when around one-third of the total parental time on these activities is done by fathers (Baxter & Smart, 2010). Assessments of fairness, however, may also vary when men and women have non-traditional rather than traditional attitudes. Some of the research in this area is discussed later in this chapter.

Decisions about how the paid and unpaid work within the family is distributed may well be a result of mothers' as well as fathers' attitudes, and so it is useful to consider this broader view rather than that of one parent alone. Previous research, for example, has highlighted the importance of fathers' as well as mothers' gender role attitudes in explaining how household work is shared (Coltrane, 2000; Davis & Greenstein, 2009). Some studies have taken this further by exploring whether there is some interaction between mothers' and fathers' gender role attitudes in predicting the allocation of parents' time to household activities (Bulanda, 2004; Greenstein, 1996b), as might be suggested by the idea of "maternal gatekeeping" by more traditional mothers, such that fathers are deterred from being involved, regardless of their own desire to be involved (Allen & Hawkins, 1999).

Analysis of gender role attitudes using LSAC allows us to explore views of mothers and fathers in a sample of parents with school-aged children, and to relate these data to parental and family characteristics, and to parents' time use. Specifically, these data allow detailed analyses of gender role attitudes, as expressed in views about the male breadwinner model and about equal sharing of child care and household work. To what extent these attitudes vary for mothers and fathers, and also according to family and personal characteristics is explored in this chapter. A particular focus is given to the relationships between attitudes and parental employment patterns. The extent to which there are more traditional gender role attitudes among parents when mothers are not employed might provide more insights into the factors leading to the non-employment of these women. Further, the amounts of time parents spend on child care and other domestic work, as well as their perceptions of fairness, are considered in relation to parents' gender role attitudes to explore whether the concept of fairness differs in families of more traditional, versus non-traditional, parents. To summarise, this chapter will seek to answer the following questions:

- What are mothers' and fathers' gender role attitudes, and how do these align with parental employment patterns?
- What key demographic factors emerge in describing which mothers and fathers have more traditional gender role attitudes (e.g., educational attainment, language spoken at home, family composition)?
- How closely are gender role attitudes matched within couples?
- To what extent are different patterns of paid and unpaid (child care and domestic) work related to different gender role attitudes of each parent?
- How are parents' perceptions of the fairness in how unpaid work is shared related to their gender role attitudes?

These questions will be explored within each of the subsections of the chapter, following a description of the data used throughout.

3.2 Data and methods

Measures of mothers' and fathers' gender role attitudes

This chapter uses Wave 5 data for the K cohort of LSAC, in which the LSAC study children were aged 12–13 years. This was the first main wave in which gender role attitudes were collected. The items were also asked of B cohort parents, and similar results are achieved if the analyses are repeated for that sample. The B cohort results have not been presented here.

The gender role items available in LSAC and analysed in this chapter are:

- "It is better for the family if the husband is the principal breadwinner outside the home and the wife has primary responsibility for the home and children"; and
- "If both husband and wife work, they should share equally in the housework and child care".

Both these items relate to the way in which paid and unpaid work should be distributed within the family. Items the same as or very much like these have been used to assess gender role attitudes in a number of studies (see Davis & Greenstein, 2009). For Australia, see in particular Van Egmond and colleagues (2010) who used data from five surveys, including the Household, Income and Labour Dynamics in Australia (HILDA) survey, to examine trends in men's and women's gender role attitudes.

Throughout this chapter the first of these statements is referred to as measuring support for the male breadwinner model. The second statement is referred to as measuring support for equal sharing when both parents work. Note that the wording of the equal sharing statement does not take account of the likely differences in paid work hours of mothers and fathers in Australia, with the majority of employed mothers working part-time hours. A presumption of this question seems to be that when both husband and wife work, they would be working the same hours and so should share equally in housework or child care. Whether this affects how parents respond to this item remains an open question.

Parents' views on these items were collected on a Likert scale in which parents indicated whether they "strongly disagree", "disagree", "neither agree nor disagree", "agree" or "strongly agree" with each statement. For most analyses in this chapter, the two categories representing some disagreement are combined, as are the two categories representing some agreement. Those who strongly agreed or agreed that the male breadwinner model is better are referred to here as being "traditional", those who were neutral (neither agreed nor disagreed) are referred to as being ambivalent or undecided, and those who strongly disagreed or disagreed are referred to as being "non-traditional".

While having only two items for analysis is somewhat limiting, the rich family information on paid and unpaid work in LSAC provides extensive opportunities for exploring how these two gender role items vary with different family circumstances.[1]

Sample

In Wave 5 of the K cohort, 3,956 families were interviewed, from which responses to the gender role items were available for 3,679 mothers and 2,263 fathers. The smaller number of responses for fathers reflects both the incidence of single-mother households (of the 3,679 mother responses, 580 were from single-mother households) and the non-response by fathers (within 3,256 couple families, 3,099 mothers and 2,199 fathers provided responses to these items).[2] Beyond this introduction to the data, the analyses are presented only for couple families, so that gender role attitudes can be explored in the context of the sharing of paid and unpaid work in the one household. Only partnered parents where both parents provided responses are included, to maintain consistency throughout the analyses and to allow within-couple comparisons of mothers and fathers. These respondents are considered to be in-scope mothers and fathers. There is some bias in this sample; in particular, the final in-scope sample excludes the vast majority of those families with not-employed fathers, and also under-represents families with not-employed mothers.[3] This is because of higher non-response to the self-completion questionnaire by fathers in these families. Because the sample is not representative of families in which fathers are not employed, these analyses are not able to

[1] An additional item collected was: "Ideally, there should be as many women as men in important positions in government and business". As this item broaches a somewhat different topic to that of the other items, having a focus on the workplace rather than the family, it is not used in this chapter.

[2] Non-response usually reflects non-completion of the self-complete survey by Parent 2.

[3] Among fathers within the in-scope sample, 7% were in part-time work and 93% in full-time work, with less than 1% not employed. For the sample without a partner response, 18% of fathers were not employed, 7% were part-time employed and 75% were full-time employed. This partner employment information was provided by the responding parent in the main interview. Among mothers within the in-scope sample (both partners responding), 17% were not employed, 53% were in part-time work and 31% were in full-time work, while within partnered families with no partner response, 30% of mothers were not employed, 41% were part-time employed and 30% were full-time employed.

explore how non-traditional patterns of parental employment (in particular, female breadwinner families) are related to different gender role attitudes of parents.

Gender role attitudes by family type and parental response

Responses on the male breadwinner item are shown in Table 3.1 for single mothers, partnered mothers with no responding partner, and the in-scope sample—partnered mothers with a responding partner. Differences in the responses on the breadwinner item by mothers who had and did not have a responding partner were not statistically significant, suggesting that on this item, there was no particular bias in using the sample of mothers with responding partners. These results show that single mothers were considerably more likely than partnered mothers to strongly disagree that a male breadwinner model is better. While disagreement with this item is typically interpreted as indicating a less traditional gender role attitude, it may simply indicate that they do not agree that having a breadwinner husband would make their situation better. Results for partnered fathers with a responding partner are also shown.[4] The responses of mothers and fathers in the in-scope sample had very similar distributions on this item. Previous research on gender role attitudes has typically found more conservative or traditional attitudes for men than for women (e.g., Van Egmond et al., 2010). The lack of difference between men and women here may reflect that this sample includes only partnered parents, whose views may not be representative of views in the wider population.

Table 3.1: Agreement with the male breadwinner model, comparisons of in-scope and out-of-scope samples

	Single mother (%)	Partnered mother, no partner response (%)	Partnered mother, with partner response (%)	Partnered father, with partner response (%)
Strongly disagree	21.5	10.8	10.7	9.9
Disagree	25.6	22.7	27.5	26.2
Neither agree nor disagree	33.2	38.4	33.8	37.0
Agree	14.5	20.4	21.1	20.6
Strongly agree	5.2	7.7	6.9	6.3
Total	100.0	100.0	100.0	100.0
No. of observations	580	914	2,116	2,116

Notes: Chi-square tests were used to compare distributions of single compared to partnered mothers (χ^2 (4, n = 3610) = 61.07, $p < .001$); then, within partnered mothers, those mothers with and without partner responses (χ^2 (4, n = 3030) = 10.52, $p > .05$). Chi-square tests could not be used to compare mothers' and fathers' responses since these responses are not independent.

The results for the equal sharing item are shown in Table 3.2 (on page 43). Overall, there was very strong agreement with this statement by mothers and fathers, which is consistent with views of the wider population reported elsewhere (Van Egmond et al., 2010). For example, in reviewing literature related to household labour, Coltrane (2000) noted that the vast majority of men and women agree that family labour should be shared, despite the very gendered patterns of family labour that are evident. There were differences between single and partnered mothers on this item, with single mothers more likely than partnered mothers to strongly agree that there should be equal sharing of housework and child care. There was a small difference in the distribution of responses to this item if comparing partnered women with and without a partner response, with the in-scope sample in somewhat more agreement about equal sharing. Also, in-scope mothers and fathers differed somewhat on their responses to this item, with greater agreement (strongly agree) about equal sharing by mothers rather than fathers. For all mothers and fathers, however, very few disagreed or strongly disagreed that housework and child care should be equally shared when both parents work.

[4] In these numbers, "mothers" and "fathers" include single and partnered parents who are biological, adoptive, step- and foster parents of the LSAC study child. There were only 77 responding partnered fathers who had no partner response, so there were insufficient data to compare responses of this group to that of the in-scope sample.

Table 3.2: Agreement with equal sharing when both parents work, comparisons of in-scope and out-of-scope samples

	Single mother (%)	Partnered mother, no partner response (%)	Partnered mother, with partner response (%)	Partnered father, with partner response (%)
Strongly disagree	2.9	2.3	1.1	0.6
Disagree	2.6	3.7	2.8	3.5
Neither agree nor disagree	13.8	16.9	13.5	19.2
Agree	45.5	50.3	54.5	58.9
Strongly agree	35.3	26.9	28.1	17.8
Total	100.0	100.0	100.0	100.0
No. of observations	580	914	2,115	2,115

Notes: Chi-square tests were used to compare distributions of single compared to partnered (χ^2 (4, n = 3609) = 22.19, $p < .01$), and then within partnered mothers, those with and those without partner responses (χ^2 (4, n = 3029) = 16.59, $p < .05$). Chi-square tests could not be used to compare mothers' and fathers' responses since these responses are not independent. Percentages may not total exactly 100.0% due to rounding.

Methods

Descriptive statistics are used to analyse the gender role attitudes in relation to mothers' and fathers' work hours in section 3.4, and other demographic characteristics in section 3.5. These demographic characteristics include parents' educational attainment, religion, speaking a language other than English at home, age, marital status, number of children aged under 15, and age of youngest child. These data are described in these later sections. In additional analyses that have been referred to but not presented, the associations between variables were examined while controlling for other demographic characteristics.[5]

The gender role attitudes of mothers and fathers are compared within couples in section 3.6. Following this, parents' gender role attitudes are related to the distribution of time in paid and unpaid work in section 3.7, and to parents' perceptions of the fairness of sharing household work and child care in section 3.8. These analyses of time use are descriptive only, and focus on the male breadwinner item.

In all analyses presented in this chapter, only one wave of LSAC is used, and so it is not possible to make any claims on whether gender role attitudes determine different patterns of parental time spent in paid and unpaid work. Equally, such attitudes may be a reflection of parents' allocation of time to, and sharing of, paid and unpaid work in the family (Crompton & Lyonette, 2005; Himmelweit & Sigala, 2004; McRae, 2003).

3.3 Mothers' and fathers' gender role attitudes

Mothers' and fathers' responses on the two gender role items were described in section 3.2. Overall, these data indicate that there is some diversity of views regarding the male breadwinner model, with 38% of in-scope mothers and 36% of in-scope fathers disagreeing (including strongly disagreeing) that a male breadwinner model is better, 34% of mothers and 37% of fathers being uncommitted, and 28% of mothers and 27% of fathers believing that a male breadwinner model is better.

Despite the diversity of views about the male breadwinner model, there was much more agreement on the equal sharing of unpaid work when both parents work:

- 83% of mothers and 77% of fathers agreed (or strongly agreed) that the unpaid work should be equally shared;

[5] Specifically, ordered logistic regression models were estimated on the ungrouped responses to each of the gender role items, for mothers and fathers. Variables entered in the models were the same as those used in the descriptive analyses: categories of mothers' and fathers' work hours were included in all models. Parents' own educational attainment, religion, speaking a language other than English at home and age were included, along with family characteristics of cohabiting versus married, number of children aged under 15 and age of youngest child.

- 14% of mothers and 19% of fathers were uncommitted; and
- only 4% of mothers and fathers did not agree that work should be equally shared when both parents work.

These findings are consistent with the findings of broader population studies in Australia and elsewhere (Coltrane, 2000; Van Egmond et al., 2010), as discussed in the introduction.

Regardless of views about the male breadwinner model, the majority of parents believe that unpaid work should be equally shared when both parents work (see Table 3.3). Agreement with this was lowest among those who expressed no strong views regarding the male breadwinner model (that is, those who selected "neither agree nor disagree") as a relatively high percentage of these parents likewise expressed no strong views regarding the sharing of unpaid work.

Table 3.3: Correspondence between agreement with the two gender role items, mothers and fathers

Agreement with male breadwinner model	Agreement with equal sharing when both parents work (%)				No. of observations
	Agree	Neutral	Disagree	Total	
Mothers					
Agree (traditional)	83.5	11.4	5.1	100.0	565
Neutral	77.1	20.7	2.2	100.0	709
Disagree (non-traditional)	87.2	8.5	4.3	100.0	839
Total	82.8	13.4	3.8	100.0	2,113
No. of observations	1,755	277	81	2,113	
Fathers					
Agree (traditional)	78.9	15.7	5.4	100.0	543
Neutral	70.4	28.2	1.4	100.0	777
Disagree (non-traditional)	81.5	12.5	6.0	100.0	793
Total	76.7	19.2	4.1	100.0	2,113
No. of observations	1,618	406	89	2,113	

These results indicate that having a view that the male breadwinner model is better is not typically associated with a view that the allocation of child care and household work at home should be gendered if both parents work. This suggests that these two measures, while used throughout this chapter to assess gender role attitudes, might be capturing two quite different concepts. We return to discuss this more fully in the final section of the chapter.

3.4 Employment patterns and gender role attitudes

The extent to which parents' gender role attitudes are matched to their actual levels of participation in paid work is examined in this section. The tables in this section show the associations first for the male breadwinner item and then for the equal sharing item. The discussion of results also references additional analyses of these associations in which other characteristics of parents and families were controlled.[6]

Overall, we expected to find significant associations between mothers' behaviour (maternal employment) and gender role attitudes, with less traditional views among mothers who spend longer hours in paid work, and more traditional views among mothers who are not employed. Such associations might reflect that gender role attitudes of mothers drive them to choose particular employment patterns, or that parents change their attitudes to be consistent with their behaviour (as predicted by Festinger's [1957] cognitive dissonance theory). In fact, it appears that both arguments apply, with cross-sectional and longitudinal research finding evidence of reciprocal effects between parents' attitudes and behaviours concerning maternal employment (Himmelweit & Sigala, 2004; Kalmijn, 2005; Schober & Scott, 2012). Further, partners' gender role attitudes may be part of this

[6] For methods, refer to Footnote 5.

picture, in that mothers' employment participation and/or attitudes may change in response to fathers' attitudes (Kalmijn, 2005; Schober & Scott, 2012).

First, looking separately at mothers' and fathers' views on the male breadwinner model, Table 3.4 shows how views vary with differences in mothers' and fathers' usual weekly work hours. Mothers' usual hours in employment were classified as full-time (35 hours or more per week), part-time (1–34 hours per week) or not employed. Overall, 31% of mothers were employed full-time, 53% part-time and 17% not employed.

Table 3.4: Parental work hours and mothers' and fathers' agreement with the male breadwinner model

	Mothers (%)				Fathers (%)			
	Agree (traditional)	Neutral	Disagree (non-traditional)	Total	Agree (traditional)	Neutral	Disagree (non-traditional)	Total
Mothers' employment								
Not employed	47.9	34.1	18.0	100.0	42.1	39.9	18.0	100.0
Part-time employed	28.6	36.9	34.5	100.0	28.6	38.6	32.9	100.0
Full-time employed	16.3	28.2	55.5	100.0	15.8	32.7	51.5	100.0
Fathers' employment								
Not employed or part-time employed	33.6	24.9	41.6	100.0	23.5	30.6	46.0	100.0
Full-time employed	27.6	34.5	37.9	100.0	27.2	37.5	35.3	100.0
All mothers and fathers	28.1	33.8	38.1	100.0	26.9	37.0	36.1	100.0
No. of observations	567	710	839	2,116	544	779	793	2,116

Notes: Chi-square tests used to compare distribution of responses to the male breadwinner item: mothers' views by mothers' employment: χ^2 (4, n = 2,116) = 344.22, $p < .001$; mothers' views by fathers' employment: χ^2 (2, n = 2,116) = 11.7, $p > .05$ (not significant [n. s.]); fathers' views by mothers' employment: χ^2 (4, n = 2,116) = 270.65, $p < .001$; fathers' views by fathers' employment: χ^2 (2, n = 2,116) = 13.45, $p > .05$ (n. s.). Percentages may not total exactly 100.0% due to rounding.

The gender role attitudes of mothers and fathers vary significantly with mothers' work hours, with greater support of the male breadwinner model when mothers were not employed. There were, however, significant numbers of parents for whom the reality did not appear to reflect their general views of what is better for the family. In particular:

- among couple families in which mothers worked full-time hours, around 16% of mothers and fathers agreed that the male breadwinner model is better; and
- among couple families in which mothers were not employed, one fifth of mothers and fathers (18%) did not agree that the male breadwinner model is better.

We return to this later in this section to explore the alignment between maternal employment and support of the male breadwinner model.

While parents' gender role attitudes may also matter in explaining the employment participation of fathers, this sample has few families with non-traditional employment arrangements; in particular, there were almost no families in which the father was not employed. This is likely to limit the potential for detecting the importance of gender role attitudes in explaining different patterns of paternal employment. To analyse these data by fathers' work hours, usual work hours were classified as full-time hours (35 hours or more per week, 93% of fathers), or part-time or not employed (including being on leave) (7% of fathers). There was somewhat less support for the male breadwinner model by fathers who worked part-time hours or were not employed, although this difference did not reach statistical significance. Mothers' support for the male breadwinner model did not vary significantly by this classification of fathers' hours.

When the associations between parental work hours and responses on the male breadwinner item were examined after controlling for other personal and family characteristics, the associations with mothers' work hours remained statistically significant. As in the analyses presented in Table 3.4, however, fathers' employment was not significant in explaining differences in mothers' views about the male breadwinner model when other variables were controlled. In these additional analyses,

it did emerge that fathers who were part-time employed or not employed were significantly less likely to support a male breadwinner model compared to fathers who were full-time employed.

The links between gender role attitudes and time spent in paid as well as unpaid work are explored further in section 3.7.

We return to examine these associations for the equal sharing item after some further analyses related to views about the male breadwinner model. Table 3.4 shows that mothers' views on this item did not always align with their actual employment patterns. That is, some mothers who did not support a male breadwinner model were not employed, whereas some mothers who did support a male breadwinner model were employed. It is not especially surprising that these attitudes and employment patterns do not align perfectly. In fact, this dissonance has been observed as likely to reflect that choices about employment are to some extent constrained (Crompton & Lyonette, 2005; Himmelweit & Sigala, 2004; McRae, 2003). For example, some mothers may prefer to be working, but are unable to find a suitable job. Others may be persuaded to remain out of employment by a competing concern over the value of caring for children. Some mothers, on the other hand, may prefer that they were caring for children instead of working, but are motivated to be employed by financial concerns, by other personal rewards that they gain from employment, or by their partner's expectations.

Of course it is also important to reflect on the nature of the item to which parents were responding. Agreement that "it is better if the husband is the principal breadwinner and the wife has responsibility for the home and children" does not necessarily mean parents believe the wife should not be employed *at all*. Agreement indicates that earning is *primarily* the husband's job and looking after the home *primarily* the wife's job, but there remains the possibility that those who strongly agree with this might also strongly believe that there is value in the wife also spending some time in paid work.

For the not-employed mothers who did not support a male breadwinner model, it is of interest to consider why these mothers were not employed, and whether or not decisions about employment were likely to be motivated by their gender role attitudes. Focusing on not-employed mothers, Table 3.5 (on page 47) first presents mothers' reasons for not being in paid work, according to their male breadwinner model views. This shows:

- Mothers who supported a male breadwinner model were considerably more likely to say that they were not working because of family-related reasons (83%), when compared to those who did not support a male breadwinner model (51%).
- A relatively high proportion of those who did not prefer the male breadwinner model said that they were not employed because of job-related reasons (17%, compared to 2% for those who prefer the male breadwinner model) and "other" reasons (34%, compared to 12% for those who prefer the male breadwinner model).
- Among mothers who were not employed overall, these other (i.e., non-job related) reasons reflected a diversity of things, but ill health or disability and studying were commonly cited factors.[7]
- Similarly, mothers who preferred a male breadwinner model were more likely than those who did not to say they left their last job because of family or caring reasons, while factors related to health and disability were more common in the "less traditional" group, as were "other" reasons.

From these data it appears that constraints form part of the explanation for mothers' non-employment, and more so among those who have less traditional gender role attitudes.

For employed mothers whose gender role attitudes suggest that they may prefer to have a secondary rather than primary role as earner in the family, it is relevant to consider how they perceive their involvement in paid work. Ideally we would examine mothers' reasons for employment, but as this information is not available, the analyses here focus on mothers' reports of whether work has a positive effect on her children and whether working makes her a better parent (Table 3.6 on page 47). This information gives some insights on whether there are different views on positive outcomes of employment according to differences in views about the male breadwinner model.

[7] Based on special data request for table of "Other, specify" responses for Parent 1.

Table 3.5: Not-employed mothers' agreement with the male breadwinner model, by reasons for non-employment

	Agree (traditional) (%)	Neutral (%)	Disagree (non-traditional) (%)	All not-employed mothers (%)
All reasons not in paid work [a]				
Family reasons [b]	82.9	73.6	51.0	74.1 ***
Not worthwhile/lose benefits/ partner earnings [c]	5.9	11.7	5.1	7.8
No suitable jobs [d]	2.2	13.4	16.9	8.7 ***
Other	12.4	14.1	34.2	16.8 **
Main reason stopped working [e]				
Family/caring reasons [f]	68.1	75.1	43.5	66.2
Job-related [g]	19.2	14.4	18.5	17.4
Own ill health/injury/disability	5.5	6.1	15.4	7.4
Other (studying, moved location, other) [h]	7.3	4.4	22.6	9.0
Total	100.0	100.0	100.0	100.0
No. of observations	147	112	58	317

Notes: [a] More than one reason could be chosen, so percentages add to more than 100%. [b] Includes: "prefers to look after own child(ren) themselves", "too busy with family", "wants to continue breastfeeding" and "have had another baby". [c] Includes: "partner earns enough to support them", "it's not worthwhile with child care costs" and "would lose government benefits if worked". [d] Includes: "no jobs available", "can't find a job that interests" and "can't find a job with enough flexibility". No one gave the reason "can't get suitable child care". [e] Percentages may not total exactly 100.0% due to rounding. [f] Includes: "pregnant/to have children", "looking after family members or ageing parents", "looking after children" and "child care too expensive, unsuitable, unavailable". [g] Includes: "lost job (retrenched, made redundant, employer went out of business, dismissed, no work available)", "job ended/temporary/seasonal", "unsatisfactory work arrangements" and "self-employed business closed down for economic reasons (went broke, liquidated, no work, no supply or demand)". [h] Includes: "studying, returning to study", "moved to another location" and "other".

Chi-square tests used to compare distributions according to not-employed mothers' support of male breadwinner model: family reasons (χ^2 (2, n = 317) = 234.45, $p < .001$); not worthwhile (χ^2 (2, n = 317) = 38.40, $p > .05$, n. s.); no suitable jobs (χ^2 (2, n = 317) = 170.08, $p < .001$); other (χ^2 (2, n = 317) = 159.44, $p < .01$); main reason stopped working (χ^2 (6, n = 301) = 293.94, $p < .01$). *** $p < .001$; ** $p < .01$.

Table 3.6: Employed mothers' agreement with the male breadwinner model and work–family spillover

	Agree (traditional) (%)	Neutral (%)	Disagree (non-traditional) (%)	All employed mothers (%)
My working has a positive effect on my child(ren)				
Strongly agree or agree	65.2	64.9	76.6	70.0
Neither agree nor disagree	24.8	29.1	18.5	23.5
Strongly disagree or disagree	10.0	6.0	4.9	6.5
Total	100.0	100.0	100.0	100.0
The fact that I work makes me a better parent				
Strongly agree or agree	45.9	46.5	62.5	53.1
Neither agree nor disagree	33.4	42.8	28.3	34.4
Strongly disagree or disagree	20.7	10.6	9.2	12.5
Total	100.0	100.0	100.0	100.0
No. of observations	421	603	793	1,817

Notes: Chi-square tests used to compare distributions according to employed mothers' support of male breadwinner model: positive effect on children (χ^2 (4, n = 1817) = 52.45, $p < .001$); makes me a better parent (χ^2 (4, n = 1817) = 105.48, $p < .001$). Percentages may not total exactly 100.0% due to rounding.

There were significant differences on the two items examined, with employed mothers who did not support a male breadwinner model being more likely to feel that their work had a positive effect on children and on their parenting. Nevertheless, what is important to note is that many mothers who supported the male breadwinner model saw positive aspects in their working, with a minority of employed mothers, even those who support a male breadwinner model, feeling that their work did not have a positive effect on their children, or did not make them a better parent. For example, 65% of employed mothers with traditional views agreed or strongly agreed that their working has a positive effect on their children, while 10% disagreed or strongly disagreed. These findings no doubt reflect that having an overall view that a male breadwinner model might be better often co-exists with an appreciation of the positive effects of employment. Gender role attitudes would be one of many factors contributing to decision-making about maternal employment. Also, as noted above, valuing a male breadwinner model does not necessarily mean that mothers themselves (or their partners) prefer that mothers were not employed at all, but suggests they might prefer to take a secondary role as income earners, and thus might prefer to work part-time rather than full-time hours.

Table 3.7 shows the relationships between beliefs about the equal sharing of housework/child care and parents' work hours. There were actually no statistically significant differences in the distribution of responses to this item according to mothers' or fathers' work hours. When other characteristics were controlled, some significant differences emerged for families in which mothers worked part-time hours. Compared to families in which mothers were working full-time hours or were not employed, if mothers worked part-time hours, fathers expressed somewhat less agreement that there should be equal sharing of housework and child care. While not statistically significant, the same finding was apparent for mothers. This may reflect a view by some that mothers' part-time work should not necessarily involve equal sharing at home, given that fathers are doing a disproportionate share of the paid work, though the majority of mothers working part-time hours, and fathers with partners working part-time hours, agreed or strongly agreed with this statement.

Table 3.7: Parental work hours and mothers' and fathers' agreement with equal sharing when both parents work

	Mothers (%)				Fathers (%)			
	Agree	Neutral	Disagree	Total	Agree	Neutral	Disagree	Total
Mothers' employment								
Not employed	84.1	11.6	4.3	100.0	77.5	19.3	3.2	100.0
Part-time employed	80.5	15.1	4.4	100.0	74.4	20.7	4.9	100.0
Full-time employed	85.6	11.6	2.8	100.0	80.2	16.5	3.3	100.0
Fathers' employment								
Not employed or part-time employed	83.0	11.1	5.9	100.0	75.0	19.6	5.4	100.0
Full-time employed	82.7	13.6	3.7	100.0	76.8	19.1	4.0	100.0
All mothers and fathers	82.7	13.4	3.9	100.0	76.7	19.2	4.1	100.0
No. of observations	1,756	277	82	2,115	1,619	406	90	2,115

Notes: Chi-square tests used to compare distributions: mothers' views by mothers' employment: χ^2 (4, n = 2115) = 16.56, $p > .05$ (n. s.); mothers' views by fathers' employment: χ^2 (2, n = 2115) = 4.47, $p > .05$ (n. s.); fathers' views by mothers' employment: χ^2 (4, n = 2115) = 16.69, $p > .05$ (n. s.); fathers' views by fathers' employment: χ^2 (2, n = 2115) = 1.34, $p > .05$ (n. s.). Percentages may not total exactly 100.0% due to rounding.

3.5 Socio-demographic characteristics and gender roles

This section turns to the research question concerning the key demographic factors related to mothers and fathers having more traditional gender role attitudes.

Demographic characteristics examined include parents' own characteristics (educational attainment, religion, main language spoken at home, and age) and family characteristics (marital status, age of youngest child, and number of children aged under 15 years in the family). These variables were

selected for analyses given findings from previous research that have found differences across these characteristics (e.g., Van Egmond et al., 2010; see also reviews by Coltrane, 2000; Davis & Greenstein, 2009). The distributions of each variable are shown in Table 3.8. As with all analyses in this chapter, only partnered parents' responses are included.

Table 3.8: Mothers' and fathers' characteristics

Characteristics	Mothers (%)	Fathers (%)
Highest qualification		
Incomplete secondary	14.2	11.0
Year 12/certificate/diploma	50.6	54.3
Bachelor or higher	35.2	34.7
Religion		
No religion	19.0	25.6
Any religion	81.0	74.4
Main language spoken at home		
English	86.5	87.7
Other	13.5	12.3
Age		
Under 40 years	17.0	10.7
40–44 years	42.1	29.6
45–49 years	30.5	37.1
50 years or older	10.4	22.6
Marital status		
Married	91.6	91.6
Cohabiting	8.4	8.4
Number of children aged < 15 years		
1	31.9	31.9
2	41.8	41.8
3 or more	26.3	26.3
Age of youngest child		
0–6 years	15.0	15.0
7–11 years	40.4	40.4
12–13 years	44.6	44.6
No. of observations	2,118	2,118

As in the earlier section that examined parental employment, the analyses presented here are based on the relationships presented in Table 3.9 (on page 50) for the male breadwinner model and Table 3.10 (on page 51) for equal sharing, but references are also made to additional analyses in which other characteristics were controlled.[8]

The findings discussed refer to associations with views about the male breadwinner model, and about equal sharing, for mothers and fathers. These findings are presented in this section, taking each of the characteristics examined one at a time.

- Mothers' gender role attitudes varied significantly with *educational attainment*, whether looking at support of the male breadwinner model or equal sharing of unpaid work (albeit a much weaker finding for this item). Higher education was associated with less traditional views on both items. Fathers' views on these items did not vary significantly with his education in the

[8] For methods, refer to Footnote 5 (on page 43). The detailed results have not been presented here, but the most important variables in explaining variation in mothers' and fathers' views about the male breadwinner model were mothers' work hours, religion and English-language proficiency. Also, for mothers, higher educational attainment and cohabiting predicted less traditional views. For fathers, employment status was an important predictor. For mothers, those who were more highly educated, without a religion, older, and with children aged 7–11 years were most likely to agree about equal sharing, while those working part-time hours were least likely to agree. For fathers, those with higher educational attainment were more likely to agree about equal sharing, and those with a part-time employed partner were less likely to agree.

independent analyses presented in Tables 3.9 and 3.10. However, when other characteristics were controlled, fathers with a bachelor degree or higher were less likely to support the male breadwinner model and were more likely to agree with equal sharing of household work when compared to fathers with incomplete secondary education.

- Differences in attitudes toward the male breadwinner model were relatively large when compared for mothers and fathers who did and did not identify with a *religion*: those who identified with a religion were more likely to support a male breadwinner model. In the analyses presented in Table 3.10, mothers' and fathers' views about equal sharing were not significantly related to religion, but after controlling for other characteristics, those who identified with a religion were less likely to agree about equal sharing.[9]

Table 3.9: Parents' characteristics and agreement with male breadwinner model

	Mothers (%)				Fathers (%)			
Characteristics	Agree (traditional)	Neutral	Disagree (non-traditional)	Total	Agree (traditional)	Neutral	Disagree (non-traditional)	Total
Highest qualification				***				n. s.
Incomplete secondary	33.3	38.0	28.8	100.0	25.9	36.5	37.6	100.0
Year 12/certificate/ diploma	29.4	34.9	35.7	100.0	27.4	38.0	34.5	100.0
Bachelor or higher	24.1	30.6	45.4	100.0	26.3	35.4	38.2	100.0
Religion				**				***
No religion	20.4	35.1	44.5	100.0	19.7	38.4	41.9	100.0
Any religion	29.9	33.5	36.7	100.0	29.4	36.6	34.0	100.0
Main language spoken at home				**				***
English	26.0	34.7	39.2	100.0	24.5	37.9	37.6	100.0
Other	41.1	27.7	31.1	100.0	43.9	30.8	25.3	100.0
Age				n. s.				n. s.
Under 40 years	29.1	32.8	38.1	100.0	26.4	40.4	33.2	100.0
40–44 years	28.7	34.8	36.5	100.0	26.4	36.5	37.1	100.0
45–49 years	26.5	33.6	39.9	100.0	25.8	37.5	36.7	100.0
50 years or older	28.5	31.4	40.1	100.0	29.8	35.3	34.9	100.0
Marital status				*				n. s.
Married	28.9	33.3	37.8	100.0	27.6	36.8	35.6	100.0
Cohabiting	18.9	38.8	42.4	100.0	19.2	39.3	41.5	100.0
Number of children aged < 15 years				n. s.				*
1	24.9	35.3	39.8	100.0	25.8	35.8	38.5	100.0
2	28.2	32.7	39.1	100.0	24.8	37.4	37.8	100.0
3 or more	31.6	33.7	34.7	100.0	31.6	38.0	30.4	100.0
Age of youngest child				n. s.				*
0–6 years	34.4	30.7	34.9	100.0	33.4	39.1	27.4	100.0
7–11 years	28.1	34.8	37.1	100.0	25.5	37.1	37.4	100.0
12–13 years	25.9	34.0	40.2	100.0	26.1	36.2	37.7	100.0
All parents	28.1	33.8	38.1	100.0	26.9	36.9	36.1	100.0

Notes: Significance of differences tested using chi-square. *** $p < .001$; ** $p < .01$; * $p < .05$; n. s. $p > .05$. Percentages may not total exactly 100.0% due to rounding.

[9] Information about religion was not available in Wave 5 and was carried over from Wave 4 of LSAC. If a classification of different forms of religion was used, the most "traditional" views were found among those in a category of "Other Christian" (including Uniting Church, Presbyterian, Greek Orthodox, Baptist, Lutheran and Other Christian religion), and "Other religion" (including Hinduism, Judaism, Islam, Buddhism and Other religion), rather than Catholic, Anglican or no religion. Mothers who identified as belonging to Anglican or "Other Christian" religions were significantly less likely to agree with equal sharing in the home when both parents work, when compared to those who identified as having no religion.

Table 3.10: Parents' characteristics and agreement with equal sharing when both parents work

	Mothers (%)				Fathers (%)			
Characteristics	**Agree**	**Neutral**	**Disagree**	**Total**	**Agree**	**Neutral**	**Disagree**	**Total**
Highest qualification				**				n. s.
Incomplete secondary	83.4	13.5	3.1	100.0	72.4	23.1	4.5	100.0
Year 12/certificate/ diploma	79.8	15.9	4.3	100.0	75.3	20.3	4.4	100.0
Bachelor or higher	86.7	9.7	3.6	100.0	80.6	15.7	3.7	100.0
Religion				n. s.				n. s.
No religion	86.1	10.5	3.4	100.0	76.4	20.8	2.8	100.0
Any religion	81.9	14.1	4.0	100.0	76.8	18.6	4.6	100.0
Main language spoken at home				n. s.				n. s.
English	82.5	14.0	3.6	100.0	76.6	19.2	4.4	100.0
Other	84.2	10.0	5.9	100.0	77.3	18.5	4.2	100.0
Age				n. s.				n. s.
Under 40 years	79.7	13.9	6.4	100.0	80.9	15.3	3.8	100.0
40–44 years	83.1	13.1	3.8	100.0	76.3	19.8	3.9	100.0
45–49 years	84.1	13.4	2.5	100.0	76.2	19.3	4.5	100.0
50 years or older	82.1	13.7	4.3	100.0	77.8	19.2	2.9	100.0
Marital status				n. s.				n. s.
Married	82.7	13.4	4.0	100.0	77.0	18.7	4.3	100.0
Cohabiting	82.7	14.1	3.2	100.0	73.1	24.6	2.3	100.0
Number of children aged < 15 years				n. s.				n. s.
1	81.2	14.8	4.0	100.0	76.6	20.3	3.1	100.0
2	83.3	13.1	3.6	100.0	76.3	18.5	5.2	100.0
3 or more	83.6	12.3	4.2	100.0	77.4	18.8	3.8	100.0
Age of youngest child				n. s.				n. s.
0–6 years	85.4	10.6	4.0	100.0	79.9	17.1	2.9	100.0
7–11 years	83.3	13.3	3.4	100.0	75.7	19.6	4.7	100.0
12–13 years	81.2	14.5	4.3	100.0	76.5	19.5	4.0	100.0
All parents	82.7	13.4	3.9	100.0	76.8	19.0	4.2	100.0

Notes: Significance of differences tested using chi-square. *** $p < .001$; ** $p < .01$; * $p < .05$; n. s. $p > .05$. Percentages may not total exactly 100.0% due to rounding.

- Mothers and fathers who spoke a *language other than English at home* were significantly more likely to support a male breadwinner model than mothers and fathers mainly speaking English at home. Mothers' and fathers' views about equal sharing of child care and housework when both parents work did not vary significantly according to whether or not the main language spoken at home was English.
- No significant differences in gender role attitudes emerged according to these categories of *ages* as presented in Tables 3.9 and 3.10; however, when other variables were controlled, older mothers (aged 50 years or over) were a little more likely to support equal sharing of child care and housework compared to the youngest mothers (aged under 40 years).
- Mothers in *married*, rather than cohabiting, relationships were more supportive of the male breadwinner model, and this was also significant when other characteristics were controlled. No other differences according to marital status were apparent.
- Fathers' (but not mothers') views about the male breadwinner model varied according to the *number of children* in the family, with more children associated with greater support of the male breadwinner model. For both parents, views about equal sharing did not vary significantly by number of children. When other characteristics were controlled, no statistically significant differences by number of children were apparent for either of these items. Note that this count

of children is based on children aged under 15 years living at home. Many families have older children who were not included in these counts.

- Fathers were more likely to support a male breadwinner model when there was a child aged under 7 years in the family, but these views did not vary by *age of youngest child* once other characteristics were controlled. In the more detailed analyses including other characteristics, mothers with a youngest child aged 7–11 years were more likely than those with a youngest child aged 0–6 years to agree that there should be equal sharing of household work when both parents work.

The above findings are generally consistent with the wider literature on predictors of gender role attitudes. The lack of significant findings for most variables in regard to equal sharing reflects the widespread agreement with this item. The lack of differences for some of the variables that are observed to be related to different gender role attitudes in the wider population possibly reflects that this LSAC sample is less diverse than the wider population, especially in terms of ages of respondents and family composition. Also, the lack of variation in responses to the item concerning equal sharing when both parents work makes this item less discriminating with regard to gender role attitudes, and so making it difficult to differentiate responses across groups in the population.

3.6 Couples' gender role attitudes

One of the strengths of these LSAC data is having a large sample of couple-parent families, in which gender role attitudes (and other characteristics) are available for both parents. Of particular interest is the extent to which there is alignment within couples on these items. We would expect some alignment, with the theory of assortative mating predicting that individuals choose partners with similar characteristics to themselves. Typically, this is considered in terms of demographic characteristics, but it may also extend to views about gender roles, especially if such views have implications for how tasks would be allocated within the immediate family. Kalmijn (2005), for example, examined this using a sample of couples in the Netherlands. The gender role attitudes of husbands and wives were significantly correlated at a point in time in this research, and partners' attitudes became more aligned over time. While such attitudes may be correlated, there is also likely to be diversity across families. For example, Marks, Lam, and McHale (2009) found in a sample of middle-class US families that gender role attitudes were often, but not always, shared by husbands and wives. Their analyses, which also incorporated information on the gender role attitudes of adolescents in the family, found families clustered into more traditional families, more egalitarian families and divergent families. In the traditional families, mothers tended to be more traditional in their gender role attitudes than the fathers, and in the divergent families, fathers tended to be more traditional than the mothers.

Table 3.11 (on page 53) shows the within-couple associations between mothers' and fathers' responses on the male breadwinner item using the LSAC data. Just as was evident from individual-level responses, when explored from the perspective of couples, there was also considerable diversity:

- Overall, in 19% of couples both parents were classified as non-traditional, with both disagreeing that the male breadwinner model was better.
- In another 13%, both were classified as traditional, agreeing that the male breadwinner model was better.
- It was similarly not common for mothers and fathers to have completely opposite views (in only 6% of couples did the mother disagree that the male breadwinner model was better while the father agreed, and in another 6% of couples the mother agreed that the male breadwinner was better but the father did not agree).
- There were numerous combinations in between when also taking into account the possibility of one or both parents having ambivalent or undecided views.

The degree of correspondence between mothers and fathers is evident when fathers' responses are examined for each of the groupings of mothers' responses:

- Between 43% and 50% of fathers gave the same (grouped) rating as their partner.

- In families of non-traditional mothers (who did not agree with the male breadwinner model), approximately 16% of fathers were distinctly more traditional, agreeing that the breadwinner model was better.
- Of fathers who had a more traditional partner, 21% were themselves non-traditional, disagreeing that the male breadwinner model was better.

Table 3.11: Couple-level agreement on the male breadwinner model

	Fathers (overall %)				Fathers (as % of mothers)			
Mothers	Agree (traditional)	Neutral	Disagree (non-traditional)	Total	Agree (traditional)	Neutral	Disagree (non-traditional)	Total
Agree (traditional)	13.1	9.2	5.8	28.1	46.6	32.9	20.5	100.0
Neutral	7.9	14.6	11.3	33.8	23.4	43.2	33.5	100.0
Disagree (non-traditional)	6.0	13.2	19.0	38.1	15.6	34.6	49.8	100.0
Total	26.9	37.0	36.1	100.0	26.9	37.0	36.1	100.0
No. of observations	550	790	806	2,146	550	790	806	2,146

Note: Percentages may not total exactly 100.0% due to rounding.

As previously discussed, most mothers and fathers agreed that child care and other household work should be equally shared when both parents work. When analysed at the couple level, Table 3.12 shows that:

- in 65% of couples both parents agreed with this;
- in another 24% of couples one parent agreed but the other was ambivalent or undecided; and
- there were small numbers showing other combinations, including 3% of couples in which mothers thought the household work should be equally shared but fathers did not; and another 3% with the opposite situation.

Table 3.12 also shows that if fathers' views are examined in relation to mothers' views, a relatively high proportion of fathers agreed that there should be equal sharing of household work among those whose partner believed this. Fathers were somewhat more ambivalent or undecided when mothers were ambivalent or undecided or disagreed with this item, although still a large majority believed in equal sharing of household work in these families.

Table 3.12: Couple-level agreement on equal sharing when both parents work

	Fathers (overall %)				Fathers (as % of mothers)			
Mothers	Agree	Neutral	Disagree	Total	Agree	Neutral	Disagree	Total
Agree	64.8	14.6	3.3	82.7	78.4	17.6	4.0	100.0
Neutral	9.2	3.6	0.7	13.4	68.4	26.7	4.9	100.0
Disagree	2.7	1.0	0.1	3.9	69.9	26.4	3.8	100.0
Total	76.7	19.2	4.1	100.0	76.7	19.2	4.1	100.0
No. of observations	1,643	410	92	2,145	1,643	410	92	2,145

Note: Percentages may not total exactly 100.0% due to rounding.

An interesting direction for future research with these data might be to explore the demographic characteristics of families according to the degree of correspondence between parents in their gender role attitudes. It would also be interesting to explore whether relationship quality and other aspects of family wellbeing vary when parents have discordant gender role attitudes.

3.7 Couples' gender role attitudes and sharing of paid and unpaid work

Extending the above analyses, the gender role attitudes can be related to information collected in LSAC on the time parents spend doing child care and household work, along with time spent on paid work. As noted previously, being cross-sectional in nature, these analyses cannot inform on

whether different gender role attitudes lead to particular time-use patterns, or whether they are a reflection of them. The analyses presented here provide a first look at these associations, with more detailed analyses possible to explore how parental and family characteristics also contribute to differences in parents' time use in the context of different gender role attitudes.

For these analyses, we consider time spent in child care and in other domestic work separately, given that these activities offer very different rewards to parents, and the amount of time spent on these activities might be determined by different factors (Bulanda, 2004; Deutsch, Lussier, & Servis, 1993). For example, looking at predictors of fathers' child care time and housework time using Waves 2 and 3 of LSAC, fathers with better mental health undertook more child care, but less housework (Baxter & Smart, 2010). Better relationship quality was related to fathers doing more child care, but was unrelated to the amount of housework done. Parents might have quite different motivations and processes for sharing child care compared to that of sharing housework, such that gender role attitudes might matter more to one type of household work than the other (Bulanda, 2004).

Previous research has highlighted how gender role attitudes are linked with patterns of participation in paid work and in unpaid household work and child care. In particular, fathers who have less traditional, or more egalitarian, gender role attitudes are more often involved in these activities in the home, leading to more equal sharing of housework (Greenstein, 1996b) and child care (Bulanda, 2004; Jacobs & Kelley, 2006). Women's gender role attitudes are also important in considering how unpaid family work is shared, with more egalitarian views likely to be linked with more equal sharing in the home. In contrast, if women have traditionally gendered views, fathers may actually be discouraged from their involvement, as is especially noted in respect of mothers' "gate-keeping" of child care activities and other household tasks (Allen & Hawkins, 1999). See also Coltrane (2000) and Davis and Greenstein (2009) for reviews of the extensive literature in this field.

No doubt there is a complex interplay of attitudes and behaviours in families, especially when mothers and fathers have divergent gender role attitudes. In this section, parents' time use is related to mothers' gender role attitudes, and also within-couple gender role attitudes. This research especially extends previous research in this area by making use of up-to-date couple-level data. The focus throughout this section is on views about the male breadwinner model, as this item provides some differentiation between families that is not so apparent with the item on equal sharing, given the widespread agreement by parents on this item.

Information on time spent doing unpaid child care was collected from each parent with the question, "How much time per week do you personally spend playing with your children, helping them with personal care, teaching, coaching or actively supervising them, getting them to child care, school or other activities?" For other household work, parents were asked "How much time per week do you personally spend on domestic tasks such as housework, home maintenance, shopping and cooking?" We refer to these two estimates as time spent in child care and in housework respectively. Information on parents' usual hours spent in employment is included in these analyses, and referred to as time in paid work. Among the in-scope sample:

- mothers spent an average of 24 hours per week in paid work, 19 hours per week doing child care, and 20 hours per week doing housework; and
- fathers spent, on average, 45 hours doing paid work, 10 hours doing child care, and 10 hours doing housework per week.

These estimates are comparable to those obtained using HILDA.[10]

How do these gendered time-use patterns vary by mothers' gender role attitudes? We saw above that mothers who spent few (or no) hours in paid work had more traditional gender role attitudes (as assessed on views about the male breadwinner model) than those working full-time. Not

[10] To derive comparable estimates from HILDA, partnered parents in HILDA Wave 12 were examined, and the sample weights were adjusted to give an age of youngest child distribution that was the same as that of the Wave 5 K cohort. From these re-weighted data it was estimated that mothers spent an average of 23 hours per week in paid work, 19 hours doing child care and 20 hours doing housework. Fathers spent an average of 42 hours per week in paid work, 10 hours doing child care and 7 hours doing housework. Because these time-use patterns do vary by age of youngest child, if we instead derive these estimates of the HILDA sample with children aged up to 13 years using the original sample weights, mothers spent an average of 18 hours per week in paid work, 31 hours doing child care and 21 hours doing housework, and fathers spent an average of 42 hours per week in paid work, 14 hours doing child care and 7 hours doing housework.

surprisingly, then, Table 3.13 shows that mothers with more traditional gender role attitudes spent the least hours in paid work (average of 18 hours per week) compared to those with non-traditional views (average of 31 hours per week).

Table 3.13: Parental time use and mothers' agreement with the male breadwinner model

	Agree (traditional)	Neutral	Disagree (non-traditional)	All families
Mothers, average hours per week				
Paid work	17.5	23.0	30.5	24.3 ***
Child care	20.9	19.3	18.3	19.3 *
Housework	23.1	20.7	17.9	20.3 ***
Fathers, average hours per week				
Paid work	44.7	46.5	44.8	45.3 *
Child care	9.2	9.9	10.8	10.1 **
Housework	8.6	9.5	10.6	9.7 ***
Mothers, average % of total parent time				
Paid work	24.7	30.1	38.6	31.8 ***
Child care	66.3	64.2	61.9	63.9 **
Housework	71.7	67.4	62.8	66.8 ***
No. of observations	567	710	839	2,116

Notes: Parents who were not employed were recorded as spending zero hours in paid work. The averages were compared across responses to the male breadwinner model item using analysis of variance: mothers' paid work ($F = 111.19$, $df = 2$, $p < .001$); mothers' child care ($F = 8.47$, $df = 2$, $p < .001$); mothers' housework ($F = 39.05$, $df = 2$, $p < .001$); fathers' paid work ($F = 3.04$, $df = 2$, $p < .05$); fathers' child care ($F = 5.21$, $df = 2$, $p < .01$); fathers' housework ($F = 11.42$, $df = 2$, $p < .001$); mothers' per cent of parental paid work ($F = 99.32$, $df = 2$, $p < .001$); mothers' per cent of parental child care ($F = 11.15$, $df = 2$, $p < .001$); mothers' per cent of parental housework ($F = 27.80$, $df = 2$, $p < .001$). *** $p < .001$; ** $p < .01$; * $p < .05$.

Mothers with more traditional views spent more hours per week doing child care and doing other housework. There is a difference of 2.6 hours per week on child care and 5.2 hours per week on housework if comparing the mothers with views that are more traditional to those with non-traditional views. The difference in paid work hours across these groups was much larger, at 13 hours per week. It is interesting to note that compared to time in paid work and time doing housework, mothers' time spent caring for their children varied less according to mothers' gender role attitudes. This may reflect that child care is valued by mothers, regardless of their gender role attitudes, with time for child care perhaps protected by mothers varying the time they spend in paid work and housework, or reducing time for other activities.

When mothers had more traditional views, fathers did somewhat less child care (a difference of 1.6 hours per week, comparing the traditional and non-traditional mothers) and somewhat less housework (2 hours difference). While the paid work hours of fathers also varied across the groups, it was actually highest when mothers were ambivalent or undecided about the male breadwinner model.

One way of summarising these data is to calculate (in percentage terms) how much of the total parental paid work, child care and other household work is done by each parent. Overall, mothers did 32% of the paid work, 64% of the child care and 67% of the household work. Reflecting the patterns described above, mothers whose views were more traditional did less of the parental paid work and proportionately more of the parental child care and housework. That is, mothers did the majority of child care and housework, regardless of their views about the male breadwinner model, but they did a greater share when they had more conservative views on this.

This can be extended to examine how these time-use patterns vary for the different combinations of mothers' and fathers' gender role attitudes—again, focusing on their views on the male breadwinner model (Figure 3.1 on page 56). For simplicity, the percentage of child care, housework and paid work done by mothers is shown. To describe the findings, results for ambivalent or undecided mothers and fathers are put aside to concentrate on findings related to the non-traditional and traditional mothers and fathers.

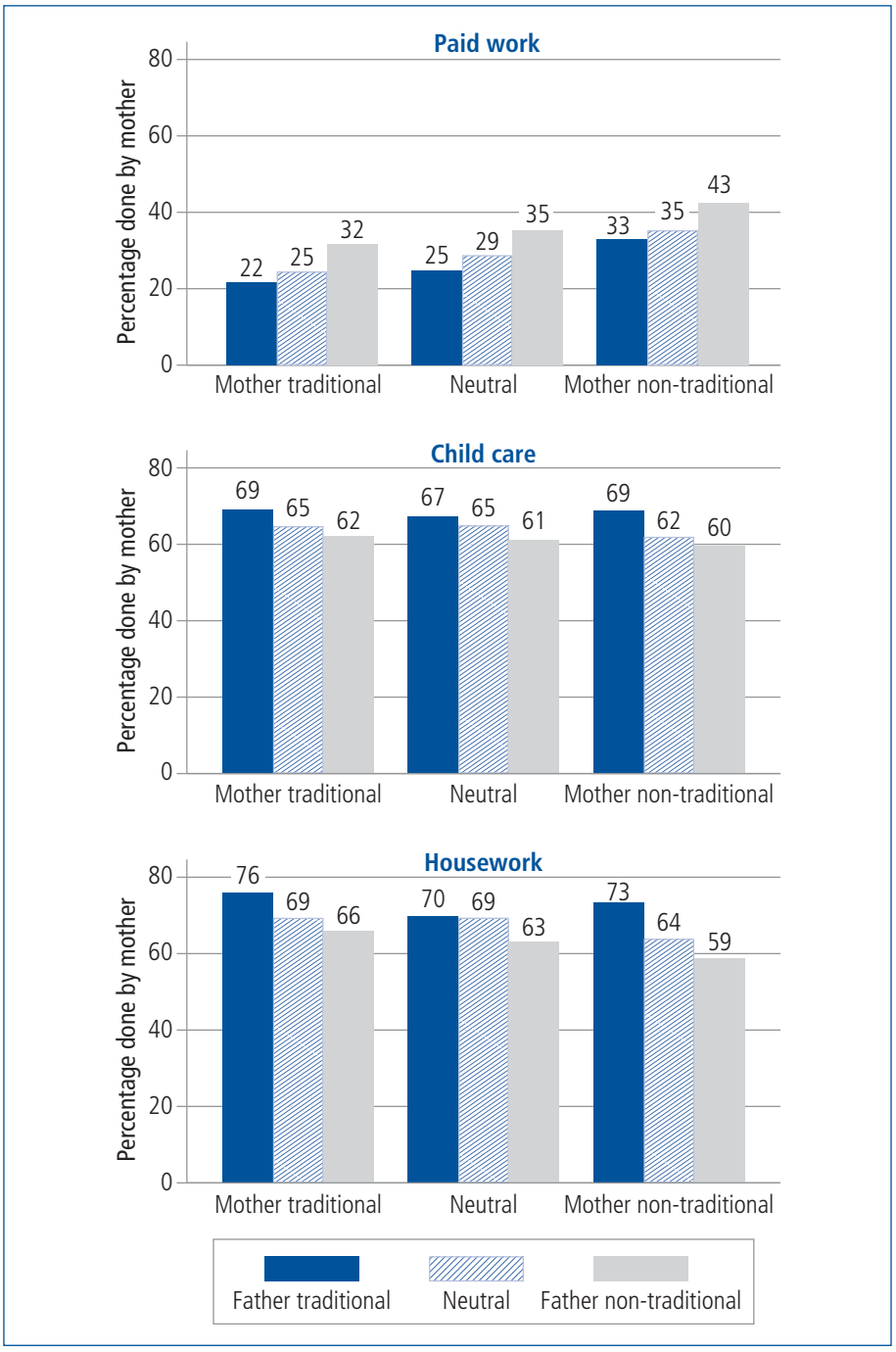

Figure 3.1: Mothers' share of parental time in paid work, child care and housework, by couple-level agreement on male breadwinner model

There are different patterns when comparing one extreme to the other; that is, comparing families in which both parents have non-traditional views to those in which both parents have more traditional views. For example, when both parents have traditional views, mothers do 69% of the child care and 75% of the other household work. In contrast, when both parents have non-traditional views, mothers do less (60% of the child care and 59% of the housework). Parents' time in paid work also varies in line with what would be expected. These data indicate that parents' time allocation is related to both parents' gender role attitudes, rather than one parent's alone. That is, regardless of mothers' own gender role attitudes, the percentage of the parental child care and housework done by them is lower when fathers' gender role attitudes are non-traditional. Of course, as discussed previously, given these are cross-sectional associations, it is not appropriate to assume that attitudes

have caused these time-use patterns. For example, it may be that attitudes reflect the established time-use patterns of parents—as predicted by cognitive dissonance theory (Festinger, 1957).

Greenstein's (1996b) study found that mothers' gender role attitudes to some extent superseded those of fathers when explaining variation in parents' share of housework. When mothers were more traditional, it did not matter whether or not fathers had non-traditional or traditional views—fathers' share of housework remained low. This suggested some degree of gate-keeping of this household work by mothers who had especially traditional views about gender roles. This finding is not apparent here, perhaps reflecting the more contemporary nature of these data compared to the 1987–88 data used in Greenstein's study. The findings from the LSAC analyses are not unique, with several studies finding that fathers' gender role attitudes matter in explaining variation in fathers' participation in housework or child care. Looking at child care involvement, for example, Bulanda (2004) found that fathers' involvement was more strongly predicted by fathers' gender role attitudes than by mothers', with no evidence that fathers' involvement was lower when mothers had more traditional attitudes, as might be suggested if these mothers were "gate-keeping" these child care activities.

Overall, these percentages suggest that when both parents have traditional views, then the sharing of paid and unpaid work is also more "traditional" or less equal, and when both parents have non-traditional views, there is more equal sharing of paid and unpaid work. Even so, the sharing of paid and unpaid work in these non-traditional families approaches but does not achieve equality. These percentages of course fail to highlight the underlying variation in mothers' and fathers' time spent on activities, since variation in percentages may reflect variation in mothers' time alone, in fathers' time alone, or in both. These data offer the opportunity examine these time-use patterns more fully, also in the context of different parental and family characteristics.

3.8 Perceived fairness of child care and housework time and gender role attitudes

It is frequently observed that despite the uneven gender distribution of housework and child care within couples, parents often report that the allocation of these activities between themselves is fair (Baxter, 2000; Blair, 1998; Blair & Johnson, 1992; Coltrane, 2000; Greenstein, 1996a; Thompson, 1991).

In earlier analyses of the LSAC data, for example, Baxter and Smart (2010) found that 44% of mothers reported that they did their fair share and 55% more than their fair share of the child care. Mothers who reported that the distribution of child care between themselves and their partner was fair did an average of 64% of the parental child care compared to 71% for those doing more than their fair share. Also, 38% of mothers reported doing their fair share of housework and 60% reported doing more than their fair share. Those who reported that the distribution of housework was fair did 67% of the housework, on average, and those who reported that they did more than their fair share did 76% of the housework, on average. Baxter and Smart's analyses drew upon both cohorts and earlier waves of LSAC, and so children were somewhat younger than those analysed in this chapter.

For this final analytical section, the time-use data and gender role attitudes are examined in relation to mothers' reports of fairness of the parental sharing of housework and child care. For simplicity, here we refer only to mothers' gender role attitudes and mothers' reports of the fairness of sharing of housework and child care. Clearly, extending this to take account of fathers' views is a direction for further research. For this subsection, as with the above subsection, the analyses have not yet been extended to consider how associations vary when other family or parental characteristics are taken into account.

The information about fairness is first examined without consideration of gender role attitudes. Overall it is expected that, like Baxter and Smart's earlier analyses, perceptions of fairness will be more likely when the sharing of tasks is more equal. However, as discussed in many of the studies on this topic, perceptions of fairness appear to be formed within broader frameworks and contexts than this, such that the division of household work between partners will not always predict parents' perceptions of fairness, and it does not take a 50/50 split to be seen as "fair". (See, for example, Baxter, 2000; Blair & Johnson, 1992; Thompson, 1991).

Looking first at child care:

- when mothers reported that they did their fair share of child care (53% of mothers), they did 62% of the child care; and
- when they reported doing more than or much more than their fair share (46% of mothers), they did 67% of the child care.[11]

The differences in the average amount of time mothers spent doing child care for these groups is quite small, with 19.1 hours per week child care done by mothers who said they did their fair share and 19.8 hours per week by mothers who did more than their fair share.

The amount of time fathers spent on child care in these two groups contributes to the difference in percentages, with fathers doing 10.9 hours per week when mothers reported that they did their fair share of child care, and fathers doing 9.0 hours per week when mothers reported themselves doing more than their fair share.

With respect to housework:

- mothers reporting doing less than their fair share (4% of mothers) did 46% of the housework;
- mothers reporting doing their fair share (43%) did 62% of the housework; and
- mothers reporting doing more than their fair share (53%), did 72% of the housework.

Differences between the "fair" and "more than fair" groups reflect different amounts of time mothers spend doing housework (19.3 hours and 21.8 hours per week for these two groups respectively), as well as time that fathers spend doing housework (11.2 hours and 8.1 hours per week respectively).

Introducing gender role attitudes into these analyses, it is first worth noting that "traditional" mothers were more likely to say they did more than their fair share of child care (56%) and housework (63%), compared to non-traditional mothers (40% and 48% respectively). Of course, if mothers make assessments about fairness based on their relative contribution to these tasks, this may simply reflect that mothers with more traditional gender role attitudes do a higher percentage of each of these types of household labour.

The aim of this analysis is to explore whether reports of fairness are to some extent moderated by gender role attitudes (see Greenstein, 1996a, for a paper on this topic). That is, when mothers have more traditional views, do they have lesser expectations of their partner in terms of how much of the child care or housework they should do, such that a "fair" share of these activities occurs when mothers are doing a relatively high proportion of them?

Figure 3.2 (on page 59) shows that a "fair" housework share is 58% of parental housework for non-traditional mothers and 68% of parental housework for traditional mothers. This compares to the average share of housework for mothers who say they are doing more than their fair share of 70% when mothers are non-traditional, compared to 75% when mothers are more traditional.

Figure 3.2 also shows the fairness data in relation to child care, for which differences are not as marked as they were for housework. For child care, a "fair" share is 60% of parental child care for non-traditional mothers and just a little higher at 63% for traditional mothers, while mothers saying they do more than their fair share of child care, on average, do 65% of the child care when mothers are non-traditional and 69% when mothers are more traditional.

This quite simple analysis suggests that standards by which fairness is assessed vary according to mothers' gender role attitudes. But as mothers' gender role attitudes vary with a number of parental and family characteristics, and especially with mothers' own time in paid work, it would be important in future research to examine whether these findings are explained more by these varying contextual factors, rather than the gender role attitudes themselves. This first view of these relationships provides some insights that can be explored in future research with these data.

[11] Throughout these analyses, mothers classified as "more than fair share" include those who said they did *much* more than their fair share. Fewer than 1% of mothers reported doing less or much less than their fair share of child care, and so these mothers have been excluded from this analysis.

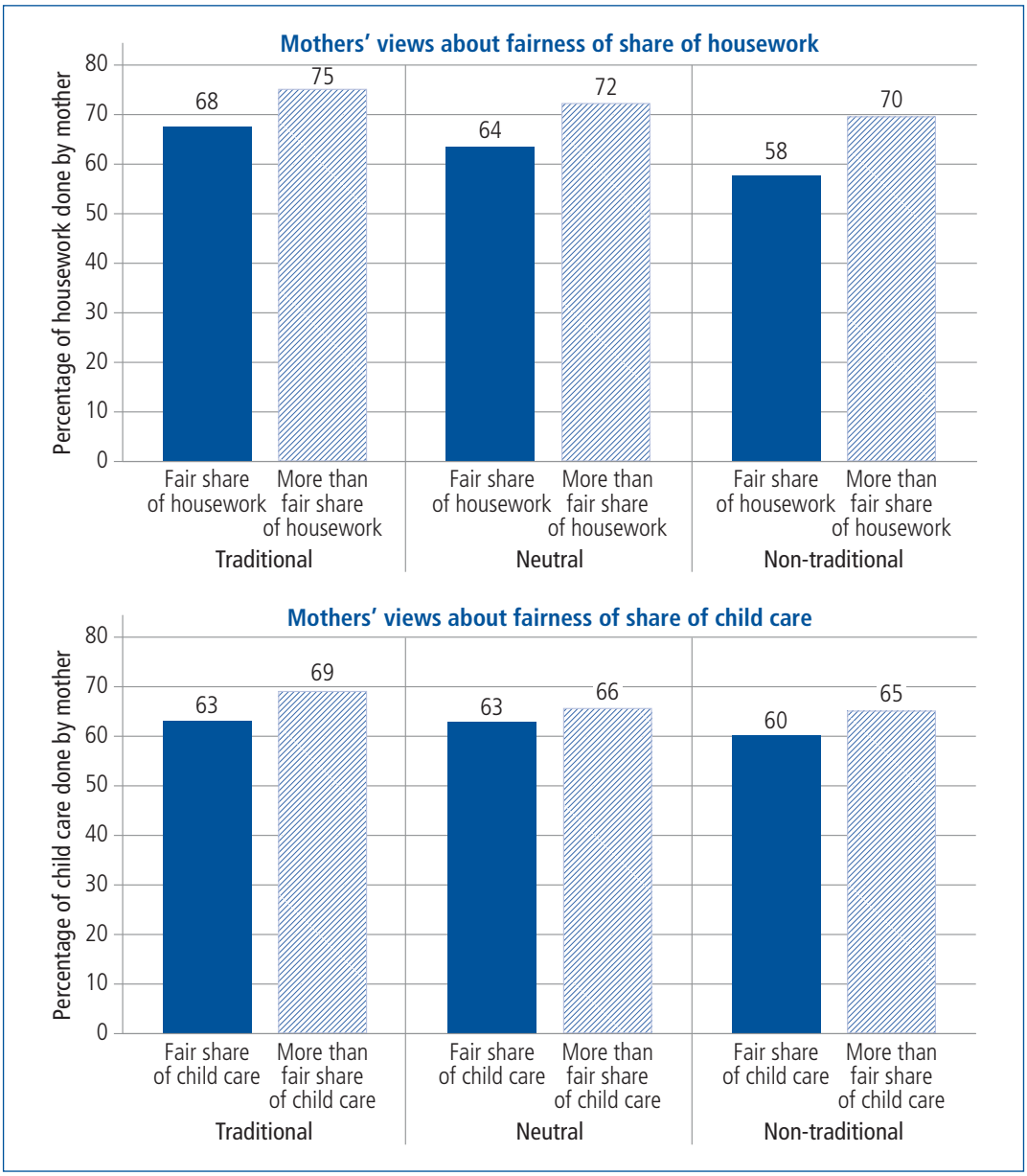

Figure 3.2: Mothers' share of child care and housework, by fairness and gender role attitudes of mothers

3.9 Discussion and conclusion

This chapter provides a first exploration of the gender role attitudes of mothers and fathers in the K cohort of LSAC, as collected in Wave 5 when the study children were aged 12–13 years. While this sample is somewhat specific when compared to larger population-based surveys, it allows insights on the gender role attitudes of parents that are raising young adolescent children, who are themselves likely to be forming their own gender role attitudes. The large sample size and the availability of couple-level data made it possible to explore within-family attitudes and time use to gain further insights on associations between gender role attitudes of parents and gendered time use patterns within the home.

These analyses showed that parents had varied views regarding the male breadwinner model, but there was widespread agreement that household work should be shared when both parents work. That is, while some parents expressed a view that "it is better for the family if the husband is the principal breadwinner outside the home and the wife has primary responsibility for the home and the children", most nevertheless believed that, should both parents be working, the housework and

child care should be shared equally. These findings are consistent with broader studies of gender role attitudes in Australia (e.g., Van Egmond et al., 2010) and elsewhere (see reviews by Coltrane, 2000; Davis & Greenstein, 2009).

The different findings for the two items likely reflect that each captures different perspectives on gender roles. According to Davis and Greenstein's (2009) analysis of commonly used gender role ideology questions, the male breadwinner item captures perspectives on "belief in gendered separate spheres", while the equal sharing item captures perspectives on "household utility". The analysis here suggests that while we can classify parents as being "traditional" or "non-traditional" in their gender role attitudes using views about the male breadwinner model, within the family the attitude is more one of equality, even in families of "traditional" parents.

In these analyses, because the majority of parents agreed that household work should be shared, there were not particularly significant findings regarding the characteristics of mothers and fathers who responded differently against this item. However, with regard to views on the male breadwinner model, differences according to parents' educational attainment (although only for mothers), religion and ethnicity emerged. Mothers with higher educational attainment were less likely to have "traditional" gender role attitudes. Mothers and fathers who identified with a religion were more likely to have traditional gender role attitudes, as were those who mainly spoke a language other than English at home. There were more minor differences according to age and family composition.

Not surprisingly, there were significant associations between mothers' employment and views about the male breadwinner model, with "non-traditional" mothers more often employed (and more often employed full-time), compared to "traditional" mothers. However, we are unable to say with these data whether mothers' employment contributes to, or is a consequence of, their gender role attitudes. Analyses of mothers whose attitudes do not align with their employment participation revealed that "non-traditional" mothers who are not employed seem to be particularly constrained in their employment behaviour by issues of disability or ill health, as well as other barriers beyond those relating to caring for children. On the other hand, analyses of perceptions about positive aspects of work among the more "traditional" mothers who are employed revealed that, while these mothers are less likely than other mothers to perceive positive effects on children and parenting of their working, still a majority perceived there to be positive effects. For parents, choices about work and caring are not always straightforward, and these data remind us that while mothers might have more traditional gender role attitudes, they might also personally value their employment. Such complexities are often noted in qualitative research on motherhood ideals and maternal decision-making about employment and child care (e.g., Crompton & Lyonette; Hand & Baxter, 2012; Himmelweit & Sigala, 2004; McRae, 2003). Being able to see these complexities in a large-scale survey of parents helps to contextualise the rich qualitative research.

Decisions about work and caring are of course made within a family context in the case of couple families, and so these data proved especially useful in being able to examine within-couple gender role attitudes, adding to a limited range of research on couple-level gender role attitudes (see Kalmijn, 2005; Marks, Lam, & McHale, 2009). Partners did not often have opposing views on either of the items examined, but there were some families in which this occurred (in 12% of families, partners had opposing views regarding the male breadwinner model and in 6% of families, partners had opposing views about equal sharing). Overall there was considerable diversity of views within couples.

Australian mothers very often work part-time rather than full-time hours, which for some may be a way they can maintain a more "traditional" allocation of time; permitting time to be spent in paid work as well as allowing time for caring for children. Mothers working part-time rather than full-time may therefore take on more of the housework and child care. The analyses of LSAC data showed that parents were less likely to agree that there should be equal sharing in the home when mothers worked part-time hours, presumably because the allocation of their time to paid work is not seen to be "equal".

The gender role attitudes (as measured against views of the male breadwinner model) of mothers as well as fathers seemed to matter when exploring how the child care and housework was shared within couples, as has been observed elsewhere (see review by Davis & Greenstein, 2009). Overall, mothers did a disproportionate share of the household work, and that share tended to be more uneven—with more done by mothers—when either mothers or fathers had more traditional

gender role attitudes. That is, the most equitable sharing of child care and housework was apparent when both parents expressed non-traditional views, and the least equitable sharing was apparent when both parents expressed more traditional views, consistent with those studies that report both mothers' and fathers' gender role attitudes explain variation in unpaid household work (e.g., Bulanda, 2004).

The division of parental time on housework was more sensitive to these gender role attitudes than was the division of parental time on child care, with mothers' time on child care varying a relatively small amount according to gender role attitudes. This may reflect that child care is an activity that is more rewarding and enjoyable than is doing housework, and so "traditional" and "non-traditional" mothers alike may protect their time with children, instead sacrificing time for housework, paid work or other activities.

These data were also used to explore associations between parents' time use, mothers' sense of fairness of child care and housework time, and gender role attitudes of mothers. This is especially of interest, in order to understand why many mothers perceive the gendered division of household tasks to be fair, despite the inequity of time spent on those tasks (see reviews by Coltrane, 2000 and Davis & Greenstein, 2009). Does the gender role attitude of mothers make a difference to mothers' perceptions of fairness? These data provided some evidence that a "fair" distribution of child care and housework involves mothers doing a greater share of the parental child care when mothers are more "traditional" versus "non-traditional", perhaps suggesting that gender role attitudes shift the reference point at which mothers consider the distribution of these tasks to be fair or not. This, however, should be read as an early finding, as it would be important to consider these relationships more fully, being mindful of other parental and family characteristics that may relate to perceptions of fairness.

This analysis is not without limitations. The main one is the reliance on one or two items to capture gender role attitudes, as described above. The other main limitation is the use of cross-sectional rather than longitudinal data to explore these relationships, which was a constraint given gender role attitude questions were not asked at previous main waves of LSAC. However, the great strength of these data is in having a large sample of perspectives of both parents, albeit for a subset of couple families in the study. As shown here, having couple data allows more insights on family processes than may be gained with the perspective of only one parent.

Exploring these gender role attitudes among parents is particularly insightful for a number of reasons, not just because these family contexts may be shaping the attitudes of children in those families. Beyond this, understanding these attitudes provides some insights on family decision-making around work and family, bringing in the attitudes of fathers as well as mothers. This chapter has provided an overview of some ways in which attitudes are linked to behaviours. In the future, it will be interesting to determine whether parental wellbeing and family functioning vary at all with these different attitudes, or when there is conflict between parents' attitudes and behaviours, or between parents' attitudes within couples. In the longer term, we will be able to see whether (and if so, how) these attitudes flow through to the later attitudes, aspirations and employment of children.

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Children's early home learning environment and learning outcomes in the early years of school

4

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4.1 Introduction

A large body of research has shown that the quality of the home learning environment during a child's first three years of life is associated not only with cognitive development at age 4–5 years but also with educational achievement at school and beyond. A poor home learning environment, for example, has been shown to be associated, in the short term, with poorer language development, deficits in school readiness and impaired cognitive development by the age of 3 (Evans et al., 2010; Trentacosta et al., 2008; Vernon-Feagans, Garrett-Peters, Willoughby, & Mills-Koonce, 2012). In the long term, it is associated with poor academic achievement at school and lower levels of education, employment and earnings in adulthood (Pungello, Iruka, Dotterer, Mills-Koonce, & Reznick, 2009; Pungello et al., 2010). Different features of the home learning environment have been found to have different influences on early cognitive development (Gest, Freeman, Domitrovich, & Welsh, 2004; Hartas, 2012; Melhuish et al., 2008). Therefore, to develop effective interventions, researchers have focused on identifying the features of a stimulating home learning environment and the individual contribution of those features to children's cognitive development and learning outcomes (Baker & Iruka, 2013).

Many studies have examined the relationship between different types of home activities (as a proxy for the home learning environment) and children's cognitive development (Sylva, Melhuish, Sammons, Siraj-Blatchford, & Taggart, 2004). An activity such as parent–child play during daily routines promotes the expression of warm feelings and shared understanding, which are important for the development of communication abilities in early childhood. For example, in a study of 132 low-income families in the United States, Camp, Cunningham, and Berman (2010) showed that child–parent verbal interactions when children were between 10 and 18 months old were significantly related to the children's expressive vocabulary at the age of 18–30 months. The importance of home learning experiences to children's numeracy development has also been demonstrated in previous studies. In a study of 2,857 children from 141 preschool centres in the United Kingdom, Melhuish et al. (2008) found that home learning activities have a strong association with children's numeracy skills at school entry. In another study from Canada, children's mathematical skills in kindergarten and Grades 1 and 2 were shown to be correlated with the frequency in which they were involved in home activities such as cooking, and playing board and card games (LeFevre et al., 2009).

It has been widely recognised that reading to children helps the development of children's positive attitudes towards reading and their capacity to assimilate formal language (Hartas, 2012; LeFevre, Polyzoi, Skwarchuk, Fast, & Sowinski, 2010). Gest et al. (2004) found that parental involvement in reading activities with their child during kindergarten has important influences not only on children's reading competency and vocabulary comprehension, but also on expressive language skills among children aged 5 years. Frequent reading to children has been found to uniquely predict expressive language ability among 18-month-olds (Westerlund & Lagerberg, 2008). Children's home literacy practices, such as reading with parents, also predicted growth in English receptive vocabulary from kindergarten to Grade 1 among 110 English-speaking children schooled in French (Sénéchal & LeFevre, 2014).

The availability of learning materials in the home has also been found to be an important predictor of children's early cognitive development. For example, Tomopoulos et al. (2006) reported that the number of books provided to children at 18 months of age is significantly related to their cognitive development and receptive language at 21 months. Using data from *Growing Up in Australia:* The Longitudinal Study of Australian Children (LSAC), Mullan and Daraganova (2012) found that, compared to children who lived in households with 30 or fewer children's books, those who lived in households with more than 30 books at the age of 4–5 years were more likely to enjoy reading at age 10–11 years.

However, research on the home learning environment has mainly been focused on children's experiences inside the house. The importance of children's involvement in activities with their parents or family members outside the house (e.g., visiting a library or museum) has not been extensively studied. Enrichment experiences have been found to be an important aspect of the home learning environment that uniquely promotes children's literacy and social outcomes at the age of 5 (Foster, Lambert, Abbott-Shim, McCarty, & Franze, 2005). Enrichment experiences are academically significant because they positively influence children's interest in learning and information processing. Activities such as visiting a museum or a zoo, for example, promote children's critical thinking and analytical skills (Marty et al., 2013).

Although the association between the home learning environment and child development has been clearly established, most existing studies have only assessed the home learning environment among kindergarten or early primary school children (Baker & Iruka, 2013; Hartas, 2012; Hood, Conlon, & Andrews, 2008; Martini & Sénéchal, 2012; Mullan & Daraganova, 2012). It is early childhood, however, that is the most important period for child development. A number of studies have documented that brain development is particularly sensitive to early experiences, and children's social and cognitive skills are acquired most effectively during early childhood (e.g., Knudsen, Heckman, Cameron, & Shonkoff, 2006; Kuhl, 2004). Thus, it is important to examine early home learning experiences in the first three years of life, when, for most children, the home still exerts the predominant influence on child language and cognitive development.

The few studies that have examined the home learning environment during the first three years of life have primarily focused on the relationship between the early home learning environment and preschool academic skills and early cognitive development (Azak, 2012; Camp et al., 2010; Rodriguez et al., 2009; Westerlund & Lagerberg, 2008). The mechanism by which the early home learning environment influences longer term cognitive outcomes is not well understood. Children's preschool academic readiness has been found to significantly predict their outcomes in later school years (Duncan et al., 2007), and it is possible that the home learning environment in early childhood may influence children's later school performance via early cognitive development. For example, Manolitsis, Georgiou, and Tziraki (2013) showed that the home literacy environment of 5-year-old children significantly predicted phonological awareness and, in turn, influenced reading ability at the end of Grade 1. In addition, maths-related activities at home at the age of 5 have been found to influence children's early numeracy skills (LeFevre et al., 2009), which are important for the acquisition of mathematics in school (Jordan, Kaplan, Locuniak, & Ramineni, 2007).

A better understanding of the influence of the early home learning environment on children's later school outcomes has important implications for theories of learning as well as educational policies and interventions. A large body of research suggests that a number of social and family factors have strong influences on parents' ability to provide a rich home learning environment for their young children. Family income, for example, was found to affect parents' ability to provide learning materials and engage in different outdoor activities (Tandon et al., 2012). Compared to coupled mothers, single mothers are less likely to interact with their children in a stimulating and nurturing manner (Rosenkrantz Aronson & Huston, 2004). In addition, children from non–English speaking families face challenges in developing their literacy skills in English in the early years. Researchers found that parents' literacy-related behaviours in a language other than English do not benefit preschoolers' English oral language and phonological awareness skills (Farver, Xu, Lonigan, & Eppe, 2013). Previous studies also found significant associations between neighbourhood characteristics and children's vocabulary and reading abilities (Dupere, Leventhal, Crosnoe, & Dion, 2010). While families' socio-economic status is often difficult to change, understanding how the home learning environment influences children's learning outcomes across different social groups may have implications for policy-makers, as this understanding can inform the design of early education programs to support families with different needs.

Using data collected in LSAC and children's Year 3 National Assessment Program—Literacy and Numeracy (NAPLAN) results, this chapter provides a first glimpse into the nature of the link between specific aspects of the early home learning environment and children's learning outcomes. In addition, it examines whether the relationship between the early home learning environment and children's learning outcomes in primary school varies by child gender, family socio-economic position, language spoken at home, and family type. Finally, to further investigate the mechanism by which the early home learning environment influences children's learning outcomes, this chapter analyses the pathways by which the early home learning environment influences later learning outcomes through early cognitive development.

In particular, the analysis addresses three main research questions:

- Is there an association between children's early home learning environment and their learning outcomes in Year 3?
- Does the influence of the early home learning environment on children's learning outcomes in Year 3 vary by gender, socio-economic status, language spoken at home and family type?
- Does the early home learning environment influence children's learning outcomes in Year 3 via their cognitive development at age 4–5 years?

4.2 Sample and measures

This section provides a brief description of the sample and measures used to assess the home learning environment, and children's cognitive development and learning outcomes.

Sample

The sample used for the analysis in this chapter was drawn from the Baby (B) cohort of the LSAC children. The data from Wave 2, when children were aged 2–3 years old, were used to assess their early home learning environment. Children's language ability and school readiness, which were assessed at Wave 3 when they were aged 4–5 years old, were used as early indicators of cognitive development. Later learning outcomes were measured using the children's Year 3 NAPLAN scores, which were linked to the Wave 5 data, when children were 8–9 years old. Therefore, the sample used in this chapter consists of B cohort children who have data available at both Waves 2 and 3, as well as completed NAPLAN assessment in Year 3—an overall total of 3,856 children.

Measures of the home learning environment

Bradley and Caldwell (1995) defined a stimulating home learning environment as one that provides educational interactions and activities (such as playing games, singing songs, shared reading, and visiting museums, libraries and playgrounds), as well as making learning materials available at home. This definition has been widely accepted and applied in recent studies (e.g., Anders et al., 2012; Son & Morrison, 2010). Following Bradley and Caldwell's (1995) concept, we identified four broad dimensions of the home learning environment:

- home activities;
- reading to the child;
- number of books at home; and
- out-of-home activities.

The advantage of using this definition is that the home learning environment is defined not only by inside-home activities but also by out-of-home activities. The information about the children's home learning environment, as defined above, was collected from parents at Wave 2. The measures of the home learning environment are described in detail below.

Home activities index

The home activities index (HAI) originally consisted of seven items. For the purposes of this chapter, we removed the last item, "reading to child", and included it as an independent measure (see below). The six remaining items were used to assess the frequency of shared parent–child activities in the home. Examples include teaching the child a song, playing games, and doing arts

and crafts. Primary carers (usually the child's mother) reported on the number of days they or an adult in their family had done these activities with their children in the previous week, with possible responses consisting of 0 = none, 1 = 1–2 days, 2 = 3–5 days and 3 = every day (6–7 days). Average scores were calculated and dichotomised to indicate the levels of home activities:

- high HAI (equal to or above the 50th percentile of average scores of HAI); or
- low HAI (below the 50th percentile of average scores of HAI).

Reading to child

The "reading to child" item was originally from the home activities index. This item was used to assess how often the primary carer or a family member read to the child during the previous week. Respondents indicated the frequency of this activity using a four-point scale (not at all, 1–2 days, 3–5 days, or every day (6–7 days)). Given more than 6 out of 10 parents (62%) read to their child every day at Wave 2 (2–3 years), this variable was dichotomised to allow comparisons between parents who read to their child:

- almost every day (6–7 days); or
- less frequently (0–5 days).

Number of children's books

The primary carers reported the presence of children's books available in the home (0 = none; 1 = 1–10 books; 2 = 11–20 books; 3 = 21–30 books; 4 = more than 30 books). In the current sample, more than half of the families had more than 30 books for their child (71%). Additionally, having more than 30 books at home has been found to be an important indicator of child literacy practice at home (Mullan & Daraganova, 2012). Therefore, this variable was dichotomised into:

- 0–30 books at home; or
- more than 30 books at home.

Out-of-home activities

Children's out-of-home activities were used to assess their involvement in experiences or activities outside the home (e.g., visiting a library or zoo, going on picnics, or attending sporting events). The primary carers reported on 10 different types of activities that the child may have experienced during the previous month. At Wave 2, about 42% of children had been involved in three or more different out-of-home activities with their parents or other family members during the previous month. Responses (0 = no; 1 = yes) were totalled and dichotomised:

- 0–2 activities outside the home per month; or
- 3 or more activities outside the home per month.

Measures of early cognitive development

To assess children's early cognitive development (at age 4–5 years), the following measures were selected at Wave 3: (a) Peabody Picture Vocabulary Test, 3rd edition (PPVT-III); and (b) the School Readiness Score (Who Am I?).

PPVT-III

The PPVT-III is a test to assess children's receptive vocabulary abilities. It is used as a screening test of verbal skills in children and adults ranging in age from 2 through 90+ years. The PPVT-III is useful in testing preschool children and is fair to persons with written-language problems and disabilities (Dunn & Dunn, 1997).

Who Am I?

The Who Am I? test was used to assess the cognitive processes that underlie the learning of early literacy and numeracy skills (De Lemos, 2002). Children were asked to write their names, copy shapes and write words and numbers. This test is considered to be a good indicator of school readiness (see details in Chapter 1).

Measures of learning outcomes

Children's reading and numeracy performance in middle primary school was measured using their NAPLAN scores. NAPLAN is an annual testing program administered to all Australian students in Years 3, 5, 7 and 9 in reading, writing, spelling, grammar, punctuation and numeracy (see details in Chapter 1), with scores that range from 0 to 1000 (Australian Curriculum Assessment and Reporting Authority, 2008). To provide a general picture of the school performance of children aged 8–9 years old, we used the results from the Year 3 NAPLAN tests of reading and numeracy.

One way to think about the magnitude of the differences in NAPLAN scores between children who had a higher quality home learning environment and those who had a lower quality home learning environment is to use the difference in the score required to meet the National Minimum Standard (NMS) at Year 3 and Year 5. Students at the NMS have typically demonstrated the basic elements of literacy and numeracy to participate at their year level. The NMS at Years 3, 5, 7 and 9 represents increasingly challenging skills and understandings as students move through the years of schooling. In Year 3, the NMS is 270 points, and the score required to meet the NMS for Year 5 is 374 points. The difference over two years is 104 points. Therefore, the annual gain in NAPLAN scores required to maintain a score at the NMS is 52 points. This can be considered to be the equivalent of one year of schooling at the Year 3 level (Warren & Haisken-DeNew, 2013). On average, Australian students attend school for about 40 weeks per year (excluding school holidays). This means each NAPLAN point can be considered as equivalent to approximately one week of schooling in Year 3 (52 points/40 weeks = 1.3 points per week).

Measure of cognitive ability

To examine the association between children's home learning environment and their learning outcomes, it is important to consider children's innate intelligence. Children's cognitive ability was measured using the Matrix Reasoning Test at Wave 5, when children were on average 8 years and 11 months. The Matrix Reasoning Test is part of the Wechsler Intelligence Scale for Children, 4th edition (WISC-IV), and measures non-verbal intelligence (Wechsler, 2003). A higher score represents a better outcome. Children's matrix reasoning scores were included as a control variable in the analyses to adjust for the inherited component of children's IQ.

Measures of socio-demographic characteristics

This chapter uses socio-demographic information collected at Wave 2, when children were 2–3 years old. As outlined in the introduction, this chapter examines the relationship between the early home learning environment and children's academic development, using different sub-population groups. This includes child gender, family socio-economic position (SEP; bottom 25%, middle 50% and top 25% of the distribution), mother's language spoken at home (English-speaking vs non–English speaking),[1] family type (single-parent vs two-parent primary households), region of residence (metropolitan vs regional) and neighbourhood disadvantage (bottom 25% vs top 75% of the Socio-Economic Indexes for Areas [SEIFA] distribution).[2] A detailed description of these measures can be found in Chapter 1.

These socio-demographic factors were chosen as they were reported to influence parents' capacities for providing a rich home learning environment (Hartas, 2011; Miser & Hupp, 2012; Sarsour et al., 2010). Maternal education is another important factor of children's academic achievement. However, this factor was omitted, as parents' level of education was used to derive the measure of family socio-economic position that was included in the analysis.

[1] Mother's language spoken at home refers to the language Parent 1 speaks at home. The vast majority of Parent 1s were mothers (98%), although a small proportion were fathers (2%) or other adults who were identified as the primary carer of the study child (0.1%). LSAC is not representative of children from culturally and linguistically diverse (CALD) backgrounds.

[2] Neighbourhood disadvantage was measured using the SEIFA Index of Relative Socio-Economic Disadvantage, with lower scores representing the most disadvantaged neighbourhoods.

4.3 Early home learning environment in Australia

Before addressing the research questions outlined in the introduction, this section provides a description of different aspects of the home learning environment among Australian families across different social groups, when children were 2–3 years of age. Table 4.1 provides a summary of a set of chi-square tests of independence, focusing on associations between different measures of the home learning environment and family and social factors.

Table 4.1: Home learning environment across socio-demographic groups

	Home activities index		Reading to child		No. of children's books		Out-of-home activities	
Socio-demographic characteristics	Low (%)	High (%)	0–5 days (%)	6–7 days (%)	0–30 (%)	> 30 (%)	0–2 (%)	3+ (%)
Child gender								
Boys	52.2	47.8	41.7	58.3	29.2	70.9	59.6	40.4
Girls	51.1	48.9	38.9	61.1	29.6	70.5	60.0	40.0
Socio-economic position								
Low SEP	56.9 ***	43.1 ***	56.6 ***	43.4 ***	44.1 ***	55.9 ***	74.5 ***	25.5 ***
Middle SEP	51.1 ***	48.9 ***	39.2 ***	60.9 ***	26.3 ***	73.7 ***	58.2 ***	41.8 ***
High SEP	45.9 ***	54.1 ***	21.7 ***	78.3 ***	16.8 ***	83.2 ***	44.2 ***	55.9 ***
Mother's language spoken at home								
English	50.3 **	49.7 **	36.9 ***	63.1 ***	23.8 ***	76.2 ***	58.5 **	41.5 **
Non-English	58.3 **	41.7 **	57.4 ***	42.6 ***	56.7 ***	43.3 ***	66.6 **	33.4 **
Family type								
Two-parent	51.6	48.4	39.2 **	60.8 **	28.5 *	71.5 *	59.2	40.8
Single-parent	50.9	49.1	48.9 **	51.1 **	35.6 *	64.4 *	65.0	35.0
Region of residence								
Metropolitan	52.8	47.2	40.2	59.8	30.0	70.0	59.2	40.8
Regional	49.1	50.9	40.8	59.2	27.7	72.3	61.1	38.9
Neighbourhood disadvantage								
Disadvantaged	52.8	47.2	53.7 ***	46.3 ***	43.4 ***	56.7 ***	67.1 ***	32.9 ***
Non-disadvantaged	51.3	48.7	36.4 ***	63.6 ***	25.2 ***	74.8 ***	57.7 ***	42.3 ***
Total	51.7	48.3	40.4	59.6	29.4	70.7	59.8	40.2
No. of observations	1,918	1,938	1,384	2,472	960	2,896	2,156	1,700

Notes: n = 3,856. The percentages in each row set sum to 100% but may not total exactly 100.0% due to rounding. Statistical significances from χ^2 tests were noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Source: Parent 1 response, B cohort, Wave 2

Home activities index

Shared home activities between parents and their children were similar across gender, family type, region of residence and neighbourhood disadvantage. Significant differences were observed only by family's socio-economic position and mother's language spoken at home. Children in low SEP families engaged in at-home activities with their parents less frequently than the other groups, with 43% of low SEP families having a high score on the HAI, compared to 49% of middle SEP families and 54% of high SEP families. Mothers who spoke a language other than English at home also tended to have less frequent shared activities with their child than mothers who spoke English at home (42% and 50% respectively).

Reading to child

Overall, about 60% of parents read to their child at least six days a week, and parents were generally actively engaged in reading to their child, regardless of the child's gender or region of residence. The proportion of parents who read to their child at least six days a week was significantly higher

among two-parent households than single-parent households. Parents from high SEP families were also more likely to read to their children daily (78%), compared to parents from middle or low SEP families (61% and 43%, respectively). Similarly, children from less disadvantaged neighbourhoods were more likely to be read to at least six days a week (64%) compared to children from more disadvantaged neighbourhoods (46%). In addition, children of English-speaking mothers were more likely to be read to at least six days a week (63%) than were children of non–English speaking mothers (43%).

Number of children's books

As Table 4.1 shows, for the current sample, a large majority of children (71%) had more than 30 children's books at home. The distribution was very similar between boys and girls, with parents generally providing a good amount of reading materials for their child at the age of 2–3 years, irrespective of the child's gender. Across socio-economic groups, there were notable differences in the number of children's books in the home. Just over half of parents (56%) in low SEP families had more than 30 books for their children, whereas there were significantly higher proportions of children with more than 30 children's books at home in high SEP families (83%). Compared to children with mothers from an English-speaking background (76%), the proportion of children who had access to more than 30 children's books was lower among those whose mother was from a non-English speaking background (43%). A significant difference was also observed among families from different neighbourhoods. About 57% of children from families living in a disadvantaged neighbourhood had more than 30 books at home, compared to 75% of children from families living in less disadvantaged neighbourhoods. In addition, the proportion of children who had access to more than 30 books was higher among children in two-parent households (72%) compared to children in lone-parent households (64%). There were no significant differences in the number of books between children who lived in metropolitan and regional areas.

Out-of-home activities

Overall, around 40% of children had three or more activities outside home with their families during the month prior to the interview. The number of out-of-home activities was higher among children in high SEP (56%) and middle SEP (42%) families than among children in low SEP families (26%); and was also higher among two-parent households (41%) than single-parent households (35%). Similarly, a lower proportion of children who lived in disadvantaged neighbourhoods (33%) experienced three or more activities outside of their homes than other children (42%). However, there were no significant differences in out-of-home activities according to the child's gender or the family's region of residence.

Summary

Overall, most families frequently engaged their children in reading and learning-related experiences and activities, although different patterns were observed across various social groups. Families living in disadvantaged neighbourhoods, with mothers speaking a language other than English at home, and in low SEP households were relatively limited in the frequency of learning experiences they provided to their children.

4.4 Is there an association between the early home learning environment and Year 3 learning outcomes?

In this section, we address the first research question by comparing children's learning outcomes in Year 3 according to the quality of their early home learning environment when they were 2–3 years old. The results are presented in Tables 4.3 to 4.7. The average NAPLAN scores for reading and numeracy are reported across different levels of various aspects of the home learning environment (e.g., low vs high home activities index). The difference in the average NAPLAN scores by the early home learning environment, after controlling for various characteristics of the child and their household, is also reported (under "Adjusted difference").

Previous research suggests that there are significant differences in children's home learning experiences and cognitive outcomes according to the child's gender (Matthews, Kizzie, Rowley, & Cortina, 2010), the family's socio-economic status (Hartas, 2012), maternal language spoken at home (Farver et al., 2013; LeFevre et al., 2010), parents' marital status (Rosenkrantz Aronson & Huston, 2004), region of residence (Baxter, Gray, & Hayes, 2011) and neighbourhood disadvantage (Dupere et al., 2010; Edwards. 2005).

As can be seen in Table 4.2, children from families of a low socio-economic status, a lone-parent and living in regional areas or disadvantaged neighbourhoods had lower NAPLAN scores, on average, than others. Although boys had lower reading scores than girls, their numeracy performances were higher. In addition, average numeracy scores were higher among children whose mother spoke a language other than English at home, compared to children whose mother spoke English at home. However, there was no significant difference observed in children's average reading scores according to their mother's language.

Table 4.2: NAPLAN scores across socio-demographic groups

	Reading scores	*p*	Numeracy scores	*p*
Child gender				
Boys	422.1	***	408.6	***
Girls	435.3		398.7	
Socio-economic position				
Low SEP	391.2		372.6	
Middle SEP	427.3	***	401.8	***
High SEP	478.6		446.6	
Mother's language spoken at home				
English	427.8	ns	401.8	*
Non-English	432.6		413.7	
Family type				
Two-parent	432.6	***	406.7	***
Single-parent	395.1		378.1	
Region of residence				
Metropolitan	435.3	***	410.5	***
Regional	411.0		388.7	
Neighbourhood disadvantage				
Disadvantaged	399.3	***	384.0	***
Non-disadvantaged	437.0		409.3	
Total	428.6		403.7	
No. of observations	3,141		3,138	

Notes: Statistical significances from regression tests were noted: * $p < .05$; ** $p < .01$; *** $p < .001$; ns = not significant.
Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Multivariate regression was performed to test whether children who were living in a more stimulating home learning environment at the age of 2–3 tend to have higher NAPLAN scores in Year 3, adjusting for the child's gender, family type, mother's language spoken at home, family's socio-economic position, region of residence, and neighbourhood disadvantage status.[3] In addition to the NAPLAN score comparisons, the magnitude of differences in NAPLAN scores was also described in terms of the length of schooling in weeks (1.3 points per school week in Year 3).

Home activities index

Children's reading and numeracy performance in Year 3 was significantly related to differences in the frequency of home activities when they were 2–3 years old. As shown in Table 4.3 (on page 71), children whose parents engaged less often in home activities with them achieved lower

[3] The adjusted difference represents the difference in average NAPLAN scores that remains after controlling for family and social characteristics using the ordinary least squares (OLS) method.

NAPLAN reading scores on average (419.7 points) compared to those whose parents frequently engaged in home activities (438.3 points). This difference remained significant even after adjusting for socio-demographic factors and was equivalent to almost 12 weeks of schooling (15.6 points).

Similarly, children with low levels of home activities on average had lower NAPLAN numeracy scores (399.2 points) than those with high levels of home activities (408.6 points). The difference in the scores was significant, even after accounting for socio-demographic factors, and equivalent to approximately six weeks of schooling in Year 3 (7.3 points).

Table 4.3: Children's reading and numeracy NAPLAN scores, by home activities index scores

NAPLAN scores	HAI scores (non-adjusted)		Adjusted difference
	Low (*n* = 1,918)	High (*n* = 1,938)	
Reading scores (mean = 428.9; *SD* = 91.5)	419.7	438.3	15.6 ***
Numeracy scores (mean = 403.9; *SD* = 74.7)	399.2	408.6	7.3 **

Note: The adjusted difference represents the difference that remains in average NAPLAN scores between more or less stimulating home learning environments after controlling for socio-demographic factors. *** $p < .001$; ** $p < .01$; * $p < .05$.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Reading to child

As Table 4.4 shows, more frequent reading to children in the early years was related to higher reading performance of children at Year 3. Children whose parents read to them every day when they were 2–3 years old had Year 3 NAPLAN reading scores approximately 40 points greater (444.2 points), on average, than children whose parents read to them less frequently (404.3 points). After adjusting for other factors, this difference remained statistically significant and was equivalent to 20 weeks of schooling in Year 3.

Similarly, the frequency with which parents read to their children was associated with children's Year 3 numeracy skills. Children whose parents read to them every day achieved significantly higher NAPLAN scores (413.7 points) compared to other children (388.1 points). The adjusted difference remained significant and was equivalent to approximately 12 weeks of schooling in Year 3 after accounting for socio-demographic factors.

Table 4.4: Children's reading and numeracy NAPLAN scores, by frequency of reading to child

NAPLAN scores	Reading to child (non-adjusted)		Adjusted difference
	0–5 days (*n* = 1,384)	6–7 days (*n* = 2,472)	
Reading scores (mean = 428.9; *SD* = 91.5)	404.3	444.2	26.3***
Numeracy scores (mean = 403.9; *SD* = 74.7)	388.1	413.7	15.4***

Note: The adjusted difference represents the difference in average NAPLAN scores between more or less stimulating home learning environments that remains after controlling for socio-demographic factors. *** $p < .001$; ** $p < .01$; * $p < .05$.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Number of children's books

Having more than 30 children's books at home at 2–3 years was positively related to higher NAPLAN scores in reading and numeracy in Year 3 (Table 4.5 on page 72). Compared to children who had 30 or fewer books at home when they were 2–3 years old, children who had more than 30 books had, on average, higher Year 3 NAPLAN reading scores (404.5 and 438.1 points respectively). The difference remained significant and was equivalent to more than four months of schooling even after adjusting for socio-demographic factors.

Similarly, children who had more than 30 books at home when they were 2–3 years old outperformed children who had 30 or fewer books by 25.9 points on their Year 3 NAPLAN numeracy scores (410.9 and 385.0 points respectively). After adjusting for a number of socio-demographic factors, this difference (18.2 points) was still statistically significant and equivalent to 14 weeks more of schooling.

Table 4.5: Children's reading and numeracy NAPLAN scores, by number of children's books

NAPLAN scores	No. of children's books (non-adjusted)		Adjusted difference
	0–30 (*n* = 960)	> 30 (*n* = 2,896)	
Reading scores (mean = 428.9; *SD* = 91.5)	404.5	438.1	22.4 ***
Numeracy scores (mean = 403.9; *SD* = 74.7)	385.0	410.9	18.2 ***

Note: The adjusted difference represents the difference in average NAPLAN scores between more or less stimulating home learning environments that remains after controlling for socio-demographic factors. *** $p < .001$; ** $p < .01$; * $p < .05$.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Out-of-home activities

There was a significant difference in average Year 3 NAPLAN scores between children who engaged in higher and lower levels of activities outside the home at 2–3 years (Table 4.6). Children who were engaged in more than two out-of-home activities in the month before the interview at age 2–3 years tended to achieve better NAPLAN scores on reading (444.3 points) than children who had fewer out-of-home activities (417.7 points). This difference was significant and equivalent to approximately 11 weeks of schooling in Year 3 after considering family and social factors.

Having more than two out-of-home activities in the month prior to the interview was also significantly associated with children's numeracy performance. Compared to children who had fewer out-of-home activities, the average Year 3 NAPLAN numeracy scores of children who had more out-of-home activities were 18.3 points higher (396.2 and 414.5 points respectively). After adjusting for a number of socio-demographic factors, the magnitude of the "out-of-home activities advantage" was about six weeks (8.3 points) of Year 3 schooling.

Table 4.6: Children's reading and numeracy NAPLAN scores, by number of out-of-home activities

NAPLAN scores	Out-of-home activities (non-adjusted)		Adjusted difference
	0–2 (*n* = 2,156)	3–5 (*n* = 1,700)	
Reading scores (mean = 428.9; *SD* = 91.5)	417.7	444.3	14.0 ***
Numeracy scores (mean = 403.9; *SD* = 74.7)	396.2	414.5	8.3 ***

Note: The adjusted difference represents the difference in average NAPLAN scores between more or less stimulating home learning environments that remains after controlling for socio-demographic factors. *** $p < .001$; ** $p < .01$; * $p < .05$.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Combined measures of the home learning environment

Finally, we assessed the unique contribution of each aspect of the home learning environment to children's school performance by including all four aspects in the same model and adjusting for family and social factors.

As shown in Table 4.7 (on page 73), all four aspects of the home learning environment were each significantly associated with Year 3 reading scores, after taking family and social factors into account. Each aspect of the home learning environment was associated with children's reading scores independently, regardless of parents conducting other learning activities with their child. The most beneficial early home activities for children's reading achievement in primary school were: reading to the child, and having more than 30 children's books at home. In particular, reading to the child at least six days a week and having more than 30 books at home were associated with better performance on NAPLAN reading tests.

In addition, reading to the child, the number of children's books at home and out-of-home activities showed significant independent associations with children's numeracy skills. However, after adjusting the contributions of other home learning environment features, the difference in children's numeracy performance between children who were engaged in high levels of at-home activities and those who engaged in low levels of at-home activities was no longer evident. This result suggests that home activities might not have an independent association with children's numeracy skills.

Table 4.7: Significance of difference in average NAPLAN scores between children, by levels of measures of the home learning environment

NAPLAN scores	Home activities	Reading to child	No. of children's books	Out-of-home activities
Reading scores	*	***	**	**
Numeracy scores	ns	**	***	*

Note: Multivariate analysis was performed to test the unique contribution of different aspects of home learning environment on numeracy and reading scores, adjusting for socio-demographic factors. *** $p < .001$; ** $p < .01$; * $p < .05$; ns = not significant.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

4.5 Does the assocation between the early home learning environment and children's learning outcomes vary by socio-demographic characteristics?

This section focuses on the second research question and examines whether the association between the home learning environment and children's learning outcomes varies across different groups within the sample (child gender, socio-economic position, mother's language spoken at home, and family type).

Firstly, we examine the "gaps" in NAPLAN scores for each of the groups of interest. The gap is the difference in Year 3 NAPLAN scores between children who had a higher quality home learning environment (e.g., more than 30 books at home) and those who had a lower quality home learning environment (e.g., 30 or fewer books at home) at age 2–3 years.

The gap is considered significant if the average Year 3 NAPLAN scores of children who had a higher quality home learning environment are different from those children who had a less stimulating home learning environment among subgroups (e.g., if girls who were read to every day had significantly higher reading scores than girls who were read to less frequently). The gaps in NAPLAN scores are presented for each of the groups of interest in Table 4.8 (on page 74). Significant results ($p < .05$) are bolded.

We also examine whether the gaps in NAPLAN scores vary within different groups (e.g., boys vs girls). In other words, whether the gap size was significantly larger for one subgroup (e.g., girls) than the other subgroup (e.g., boys). Significance levels of the differences in NAPLAN gaps between each subgroup are presented in Table 4.8.

In these estimations, the gap was adjusted for a number of socio-demographic factors that were related to children's cognitive development and learning outcomes, including child gender, socio-economic position, mother's language spoken at home, family type, region of residence and neighbourhood disadvantage (Aikens & Barbarin, 2008; Bracken & Fischel, 2008; Hartas, 2011; LeFevre et al., 2010; Matthews et al., 2010).

Subgroup analyses reveal that reading to children and the availability of children's books appear to be the most beneficial features of an early home learning environment. Compared to inside and out-of-home activities, these two features show stronger effects on children's reading and numeracy outcomes across almost all subgroups.

Overall, differences between the subgroups were not significant except between children from English and non–English speaking families. Children from English-speaking families benefited significantly in terms of their NAPLAN performance from having a more stimulating home learning environment at age 2–3 years. Specifically, a high level of engagement in home activities was significantly more beneficial for children's numeracy scores among children from English-speaking families (10.3 points) than among children from non–English speaking families (–14.3 points), after adjusting for other family and social factors. Child gender, socio-economic position and family type were not significantly associated with the gaps in NAPLAN performance between different qualities of the early home learning environment. Having a stimulating home learning environment at 2–3 years of age appeared to be equally beneficial to children's learning outcomes across these subgroups.

Table 4.8: The gap in NAPLAN scores, by home learning environments and socio-demographic characteristics

Socio-demographic characteristics	*n*	Gaps in numeracy scores: Home activities	Out-of-home activities	Reading to child	No. of children's books	Gaps in reading scores: Home activities	Out-of-home activities	Reading to child	No. of children's books
Gender									
Boys	1,977	5.2	**9.5**	**14.5**	**14.1**	**14.4**	**18.3**	**26.8**	**15.8**
Girls	1,879	**7.9**	2.9	**8.7**	**10.7**	**14.5**	5.3	**17.7**	**16.2**
Differences in gaps		ns	ns	ns	ns	ns	ns	ns	ns
Socio-economic position									
Low SEP	823	**11.7**	2.1	4.5	**12.2**	**16.1**	10.1	**19.1**	**20.8**
Middle SEP	1,987	5.2	**9.0**	**16.2**	**10.0**	**13.1**	**13.5**	**25.0**	**10.9**
High SEP	1,045	2.4	3.6	7.2	**19.3**	**15.0**	9.2	18.3	**23.2**
Differences in gaps		ns	ns	ns	ns	ns	ns	ns	ns
Language spoken at home									
English	3,392	**10.3**	**6.5**	**12.8**	**12.1**	**17.7**	**11.6**	**25.5**	**15.4**
Non-English	464	**–14.3**	4.8	6.1	13.6	–2.9	**13.1**	7.5	**16.8**
Differences in gaps		**sig.**	ns	ns	ns	ns	ns	ns	ns
Family type									
Two-parent	3,530	**6.2**	**6.4**	**10.5**	**14.1**	**15.3**	**12.3**	**22.4**	**15.7**
Single-parent	316	6.6	5.5	**16.8**	0.4	6.8	11.7	**23.4**	18.5
Differences in gaps		ns	ns	ns	ns	ns	ns	ns	ns

Note: *n* = 3,856. The gaps present adjusted differences in NAPLAN scores between more or less stimulating home learning environments that remain after controlling for child gender, socio-economic position, mother's language spoken at home, family type, region of residence and neighbourhood disadvantage. Significant results are bolded: sig. = significant ($p < .05$); ns = not significant.

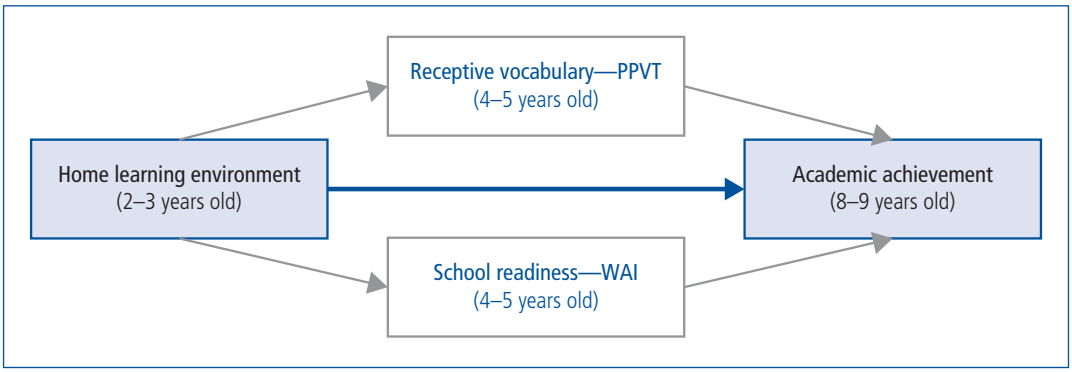
Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

It is worth noting that the lack of statistical significance of subgroup comparisons relating to family type and mothers' language spoken at home may be attributable to sample size. For example, there were only 11% of primary households headed by a single parent in this current sample (when children were 2–3 years old). In addition, LSAC is not representative of children from culturally and linguistically diverse backgrounds. Results should therefore be interpreted with caution.

4.6 Does children's cognitive development explain the association between the early home learning environment and their learning outcomes?

This section addresses the final research question and examines whether the association between the early home learning environment, measured when children were 2–3 years old, and children's academic achievement at age 8–9 years is explained by the child's cognitive development at age 4–5 years, measured by the child's level of receptive vocabulary (PPVT) and readiness for school (WAI). Figure 4.1 (on page 75) describes these associations schematically.

We refer to the association between the home learning environment and academic achievement as an "indirect association" if the path from the home learning environment to academic achievement goes via PPVT or WAI, and as "direct association" if there is a direct path from the home learning environment to academic achievement, independent of PPVT and WAI. In Figure 4.1, the direct association is presented by the bold blue arrow and indirect associations are presented by the grey arrows.



Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

Figure 4.1: Relationship between the home learning environment, vocabulary, school readiness and academic achievement

Home learning environment index

As the main aim of this analysis is to understand the role of the overall home learning environment on children's learning outcomes, rather than the individual contribution of different aspects of the home learning environment, we developed the home learning environment index (HLEI) measure. The HLEI was derived as a sum of four binary measures used to describe the different aspects of the home learning environment examined (home activities index, reading to child, number of children's books, and out-of-home activities), with values ranging from 0 (the lowest level of home learning environment) to 4 (the highest level of home learning environment). The score distribution of HLEI is presented in Table 4.9. Around 10% of the children aged 2–3 years were growing up in a relatively less stimulating home learning environment. These children had relatively low levels of engagement in home activities, were not read to every day, had 30 or fewer children's books at home, and were engaged in fewer than three out-of-home activities during the month prior to the interview. At the same time, around 16% of children aged 2–3 years were growing up in a highly stimulating home learning environment. These children were frequently engaged in home activities, were read to daily, had more than 30 children's books at home and were engaged in at least three out-of-home activities during the month prior to the interview.

Table 4.9: Distribution of home learning environment index, children aged 2–3 years

HLEI (mean = 2.19, *SD* = 1.22)	% (weighted)	*n* (unweighted)
0	10.4	304
1	19.9	679
2	26.4	1,010
3	27.2	1,145
4	16.2	718
Totals	100.0	3,856

Note: Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 response at Wave 2, B cohort

Associations between the early home learning environment and NAPLAN scores

Table 4.10 (on page 76) presents the results of the analysis that examined the direct and indirect associations between the home learning environment at 2–3 years old and Year 3 NAPLAN numeracy and reading scores. The contribution of direct and indirect associations are discussed in terms of:

- the corresponding NAPLAN points (columns 2 and 4); and
- the proportion of direct and indirect associations relative to the total association (columns 3 and 5).

Table 4.10: Associations between home learning environment, vocabulary and school readiness, by Year 3 NAPLAN scores

	Numeracy (mean = 403.69, *SD* = 74.67)		Reading (mean = 428.61, *SD* = 91.60)	
	NAPLAN points	%	NAPLAN points	%
Direct association	6.0 ***	55.0	10.1 ***	59.0
Indirect association via PPVT	2.7 ***	25.0	5.4 ***	32.0
Indirect association via WAI	2.2 ***	20.0	1.6 ***	9.0
Total association	10.8 ***	100.0	17.0 ***	100.0

Note: The analysis was adjusted for child gender, child's cognitive ability, socio-economic position, family type, mother's language spoken at home and region of residence. *** $p < .001$; ** $p < .01$; * $p < .05$.

Source: Year 3 NAPLAN numeracy and reading scores, B cohort, Wave 5

The results indicate that the total association between the home learning environment and numeracy scores in Year 3 was positive and statistically significant. This association was partially explained by a child's cognitive development at 4–5 years old. Even though 55% of the total association was due to the direct association of the home learning environment with numeracy scores, 25% of the association was via PPVT and 20% of the association was via WAI.

Therefore, for the total influence of the home learning environment (10.8 points or 8 weeks schooling in Year 3), part of the "gap" in NAPLAN numeracy scores (6.0 points or 5 weeks of schooling in Year 3) would be the result of a more stimulating home learning environment, while the other part of the increase in numeracy score would result from the fact that children would be more ready for school (with an increase of 2.2 points) and would have a better vocabulary (with an increase of 2.7 points).

A very similar pattern of associations was observed between the home learning environment and NAPLAN reading scores. The total association of the home learning environment in which a child was growing up at age 2–3 years on his/her reading achievement at 8–9 years old was positive and statistically significant, suggesting that growing up in a stimulating home learning environment would benefit children's NAPLAN reading scores by the equivalent of more than four months of schooling in Year 3 (17.0 points). Fifty-nine per cent of this increase (10.1 points) would be due to the direct association of differences in the home learning environment, whereas 32% of the association (5.6 points or one month of schooling) would result from children having a more developed vocabulary and 9% of the association (1.6 points or about 1 week of schooling) would result from children's greater school readiness.

To sum up, the home learning environment was related to children's later academic performance through children's early cognitive development and school readiness. A stimulating home learning environment at the age of 2–3 years was significantly associated with better language development and school readiness at 4–5 years and, in turn, was associated with better academic performance at Year 3. In addition, the direct association of the home learning environment with children's academic achievement was also significant. Importantly, the direct association was not trivial. This suggests that, even after adjusting for a rich set of socio-demographic factors related to a child's academic achievement, the home learning environment (measured when children were 2–3 years old) has a direct positive association on a child's academic results measured six years later, independent from children's cognitive development and school readiness at school entry.

It is important to emphasise that academic performance is highly correlated with the home learning environment at all ages, not only when children are 2–3 years old. At the same time, the home learning environment has been reported to be relatively stable over time (Dallaire & Weinraub, 2005; Masur & Turner, 2001). Children who live in a cognitively stimulating home learning environment at 2–3 years are more likely than others to continue to have a stimulating environment as they grow older; that, in turn, leads to better learning outcomes (Rodriguez & Tamis-LeMonda, 2011). In the analysis discussed in this section, we did not take into account the home learning environment at different ages, and the direct association we observed in Table 4.10 may therefore reflect the cumulative influence of the home learning environment as children grow older.

4.7 Summary and discussion

This investigation extended our understanding of the home learning environment during early childhood—a period in which child development has been shown to be particularly sensitive to environmental influences in the home—and its association with learning outcomes when children are in Year 3, using a large, nationally representative sample of Australian families.

Overall, the results present a positive picture of the home learning environment in Australia. Across all social groups, most parents made good efforts to provide a stimulating home environment for their child. However, children from families of low socio-economic position, those with mothers who spoke a language other than English and those who lived in disadvantaged neighbourhoods had fewer learning opportunities at home than others. Similar patterns have been reported in previous studies. For example, compared to children in high SEP households, children from low SEP households are half as likely to be taken to a museum, library or theatre, and they are less likely to participate in culturally enriching activities (Bradley & Corwyn, 2002). In addition, families from non–English speaking backgrounds tend to have less social support and limit the amount of time they spend outside their homes (Wilson & Dollman, 2007).

This chapter assessed the relationships between four aspects of the early home learning environment and children's later learning outcomes, and further demonstrated the power of what parents can do to promote their children's academic achievement. Shared activities at home are important in the development of language and numeracy skills later on. The association with children's reading ability was substantial and significant, even after considering a variety of socio-demographic factors. In line with previous studies, parental involvement had a significant association with child outcomes over and above the influence of social risk factors such as families' socio-economic position and parental education (Sylva et al., 2004). However, home activities did not show an independent correlation with children's numeric skills after considering other aspects of the home learning environment.

Children whose parents read to them every day when they were 2–3 years old demonstrated better reading ability at Year 3 than other children. This is in line with a previous study using LSAC K cohort data, suggesting that parent-to-child reading during childhood is significantly associated with children's reading attitudes at 10–11 years of age (Mullan & Daraganova, 2012).

In addition, children's early reading activities were also related to their numeracy outcomes in Year 3. This is consistent with a study by Kalb and Van Ours (2014), which used LSAC K cohort data and showed that children who were read to more frequently at age 4–5 were more likely to achieve high scores on the NAPLAN numeracy tests, though these effects were smaller compared to the effects on the NAPLAN reading tests. LeFevre et al. (2010) also found that exposure to children's books was significantly beneficial for Greek children's numeracy skills in Year 3, though it was not significant for Canadian children.

In addition, reading materials that parents provide to their children at home represent an important part of the home learning environment. The results reveal a significant association between the number of children's books available at home and children's reading and numeracy performance. Having books at home enhances parent–child verbal interaction and facilitates shared literacy activities, thus exerting a substantial effect on a child's language development (Korat, Arafat, Aram, & Klein, 2012). The availability of children's books at home may reflect parents' engagement with children and their general investment in their children's learning.

It is interesting to observe the positive relationship between children's book exposure (reading to the child and the number of books available) and children's numeracy skills. It is likely that parents who invest more in children's literacy practices also engage in other learning-related activities, and have higher expectations for their children's academic achievement (LeFevre et al., 2010). Additionally, children who engaged in reading activities at an early age enter school with more advanced cognitive skills (Mol & Bus, 2011) and are more ready for school, which may also enhance their ability to develop numeracy skills.

Most literacy research has focused on parent–child reading behaviours, and few studies have investigated other learning-related activities (e.g., visiting a museum) in relation to children's numeric ability. This chapter demonstrates the important relationship between out-of-home activities and children's later academic achievement. Activities outside the home require children to use skills

such as counting, planning and categorising in the context of social interactions with their parent(s) or other family members, which enhances their math competence (Baker & Iruka, 2013).

In general, the relationship between the home learning environment and children's learning outcomes did not vary substantially according to the child's gender, family type or socio-economic position. Engaging in frequent in- and out-of-home activities with parents and having more than 30 children's books at home at 2–3 years appeared to be more beneficial for children from two-parent families than children from single-parent families. However, this finding needs to be interpreted with caution due to the small proportion of single-parent families in the current sample. Children from all socio-economic groups benefited from growing up in a rich and stimulating learning environment. However, the relationship between home activities and children's reading performance was language-specific. Children whose mothers spoke a language other than English at home did not benefit significantly from shared home activities with their parents in terms of reading and numeracy performance. These results suggest that the association between home learning experiences and children's learning outcomes might differ according to family culture or language.

In the current chapter, we assessed the association between how often children were read to, their engagement in home activities and their later NAPLAN scores. However, detailed information about "how" children were read to and "how" they interact with their parents during home activities was not available. It is possible that English-speaking parents used more numeric words or more frequently encouraged mathematics during home activities than non–English speaking parents. For example, a Canadian study by Van Zeijl et al. (2006) found that Canadian parents were found to more often teach their child counting and measuring while cooking than Greek parents living in Canada. In addition, children's literacy-related experiences in their first language do not always benefit their acquisition of a second language (Gottardo & Mueller, 2009). A study in the United States found that parents' literacy-related behaviour in Spanish among Latino immigrant families was negatively associated with their children's English language skills (Farver et al., 2013). That is, children may interact with their parents in a language other than English, which can disrupt their learning in English. However, it is important to note that children whose mother did not speak English at home achieved higher levels of reading and numeric performance on average than those whose mother did speak English at home. Further investigation is needed to explain this result, but one explanation could be that these children may respond more to other home learning opportunities or formal training in English literacy and numeracy skills development. However, given that non–English speaking families were under-represented in the LSAC study, this result must be interpreted with caution.

It is worth noting that despite the home learning environment significantly influencing children's school performance, a great deal of variation in children's academic performance remains unexplained. In future studies, many other child or family factors, such as a child's temperament in early childhood, could be explored to explain children's later school achievement. To more accurately understand and predict children's academic development, the complex interactions of a wide range of socio-cultural, family and child factors should be further investigated.

This chapter explored the direct and indirect associations between the home learning environment and children's later academic outcomes, after taking into account the children's early cognitive development and a range of socio-demographic factors. It was found that children's early cognitive development, such as their early language development and school readiness, were two pathways through which the early home learning environment was related to children's later reading and numeracy skills. This result is consistent with existing studies that report that a higher quality of home learning environment predicts better cognitive development during preschool years (Brooks-Gunn & Markman, 2005; Hood et al., 2008), and children's early cognitive development predicts their school performance (Duncan et al., 2007; Jordan et al., 2007). However, the direct influence of the home learning environment on children's academic outcomes was found to be larger than its indirect influence through early language development and school readiness. It should be noted that this finding likely reflects the cumulative influences of home learning environments on children's academic performance from 2–3 years of age through to Year 3.

These findings highlight the important role that parents play in fostering children's early literacy and cognitive development to help them build a strong foundation for future learning in school. In this context, the main challenge for policies and practice is not only to encourage parents in their efforts to increase their capacity to provide a rich learning environment for their children, but

also to support less advantaged families to provide their children with rich, cognitively stimulating environments during their early childhood.

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5 Transition to secondary school

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5.1 Introduction

The transition from primary to secondary school marks a time of significant change for many children (Hanewald, 2013). It is a time of adjustment to a new school with new classmates and teachers, and to being one of the youngest in the school rather than the oldest. For the first time for many, children usually have multiple classes with different teachers and different groups of peers. They are also required to adapt to an increased workload at school, and increased responsibilities that come with having more homework and self-directed learning. Many children also have new travel arrangements for getting to and from school and may need to travel further. They are also exposed to broader experiences in studying a range of new subjects (Hanewald, 2013; Lester, Waters, & Cross, 2013). As well as all these school-related changes, children are at the same time negotiating the developmental and socio-emotional changes associated with becoming adolescents (Hanewald, 2013; Towns, 2011). Many children feel anxious in the face of these changes; however, many also feel excited and optimistic about the upcoming challenges and opportunities (Lucey & Reay, 2000; Sirsch, 2003). How well children navigate the transition to secondary school has important implications for their ongoing psychosocial, emotional and academic development (Zeedyk et al., 2003). The first year of secondary school is critical for setting children up for the following years (West, Sweeting, & Young, 2010), and poor adjustment to secondary school has been associated with disengagement and non-completion, which leads to a raft of other poor outcomes, such as limited employment opportunities (Hanewald, 2013).

5.2 School-level factors and socio-economic and demographic characteristics

There are aspects of the transition to secondary school that are challenging for all children, and research has identified several school-level factors that schools can use to support children through the transition. These include orientation tours, discussion sessions, transition programs, peer-support programs, "home room" classes, and so on (e.g., Hanewald, 2013; Vinson & Harrison, 2006). As well as school-level factors, a range of socio-economic and demographic characteristics have important influences on how well children transition to secondary school. These include gender, age, socio-economic status and having older siblings (for a summary, see West et al., 2010). For instance, girls have been found to be more vulnerable than boys with respect to changes in their friendship groups (Bailey & Baines, 2012), whereas a loss of motivation to learn has been found to be more common among boys (McGee, Ward, Gibbons, & Harlow, 2004). Previous studies have found that children's ages at the beginning of secondary school predict their transition, with younger students having more difficulties (Galton, Morrison, & Pell, 2000; West et al., 2010). In addition, children from poorer socio-economic backgrounds are more likely to have a difficult transition to secondary school, and children with older siblings at the same school are likely to have a smoother transition (West et al., 2010).

Individual characteristics and experiences

Rather than re-examining these school-level factors and socio-economic and demographic characteristics, which have been extensively studied in previous research, this chapter focuses on a selection of individual characteristics and experiences of children that have been highlighted as having important associations with successful and unsuccessful transitions to secondary school (Bailey & Baines, 2012; West et al., 2010), but have not been analysed using longitudinal data from multiple respondents, as is available from the Longitudinal Study of Australian Children (LSAC). Based on previous research, these characteristics and experiences can be broadly divided into five groups: socio-emotional wellbeing, temperament, academic performance, experiences in primary school, and parenting style and parental investment.

Research has also shown that children's *socio-emotional wellbeing* has an important influence on how well children manage the move to secondary school. For example, West et al. (2010) found that children with low self-esteem and high levels of anxiety often experienced difficulties during the transition to secondary school. Some authors (e.g., Lucey & Reay, 2000) have emphasised the importance of looking at children's personal approach (reflected in their temperament) to the experience of starting secondary school, with those who approach it as a challenge rather than a difficulty having easier transitions. Other studies have found that children who are reported as having behaviour problems in primary school are more likely to struggle with the transition to secondary school (Bailey & Baines, 2012).

Aspects of children's *temperament*, such as persistence, have been found to be important correlates of their school functioning (Guerin, Gottfried, Oliver, & Thomas, 1994).

Because schoolwork does get more challenging in secondary school, it can be expected that children with better *academic performance* in primary school may find aspects of the transition to secondary school easier because they are relatively better prepared for the challenges of the work. In a small sample of lower income adolescents in French-speaking Canada, Serbin, Stack, and Kingdon (2013) found that specific academic abilities (e.g., spelling ability), among other variables, predicted the success of adolescents' transition to secondary school.

West et al. (2010) found that children's *experiences in primary school* were important for how well they transitioned to secondary school. Children who enjoy primary school are more likely to have a more successful transition to secondary school. School connectedness is an important aspect of students' school enjoyment, and captures how much a student feels they are cared for as part of the school community. It has important psychological benefits and is associated with a range of positive behaviours (Lester et al., 2013). Lester et al. found that feelings of primary school connectedness were a strong predictor of mental health over the transition from primary to secondary school (as well as feelings of connectedness in secondary school).

The experience of bullying is an aspect of children's primary school life that has particular significance for how well they then transition to secondary school. Zeedyk et al. (2003) reported that among children, parents and teachers, bullying was the major concern during the transition from primary to secondary school, with students who had been victims of bullying more likely to have trouble with the transition (Bailey & Baines, 2012; West et al., 2010).

Parents also play a role in how well children transition to secondary school. A key way they do this is through their *parenting style and parental investment*. West et al. (2010) found that children with over-controlling parents had more difficult transitions than those whose parents were warm and caring. Parents can also support their child's transition by being involved in their education, particularly during the transition to secondary school (Anderson, Jacobs, Schramm, & Splittgerber, 2000). At this age, parents also have the main responsibility for organising children's extracurricular activities, and it has been shown that children who participate in certain activities outside of school during primary school (e.g., taking part in a variety of sports, language classes, musical groups) may have a smoother transition to secondary school (Cox & Kennedy, 2008).

There is a need for an exploration into how these pre-transition factors (socio-emotional wellbeing, temperament, academic performance, experiences in primary school, and parenting style and parental investment) are associated with post-transition difficulties, using longitudinal data from multiple respondents. Data from Wave 5 of LSAC provides the opportunity to investigate the primary to secondary school transition in the K cohort, as the children were aged 12–13 years and the

majority moved from primary to secondary school just before the Wave 5 interview. LSAC is a rich source of data about children's lives, and the study captures information about a wide range of aspects of their lives that may be related to how well they transition to secondary school. As well as the longitudinal nature of the data, the study is also particularly useful because it collects data from children, their parents and their teachers, providing multiple viewpoints on their experiences.[1]

This chapter uses the LSAC data to investigate the following research questions:

- How similar are individual children's reports and their parents' reports of difficulties with transitioning to secondary school?
- What are the socio-emotional characteristics of children who did (and did not) have difficulties with transitioning to secondary school?
- Is children's academic performance in primary school associated with the success of their transition to secondary school?
- How important are experiences in primary school for how well children negotiate the transition to secondary school?
- Are parenting style and parental investment associated with a more successful transition to secondary school?
- Which are the most important factors: socio-emotional characteristics, temperament, academic performance, experiences in primary school, and/or parenting style and parental investment?

5.3 Sample and measures

Sample

The sample described in this chapter is drawn from the population of the LSAC K cohort children. The Australian education system is state/territory-based, which means that students start secondary school at different times and at different ages in various states/territories. In particular, students in New South Wales, Victoria, Tasmania, the Northern Territory and the Australian Capital Territory move to secondary school in Year 7, when they are on average 11–12 years old. Students in Queensland, South Australia and Western Australia start secondary school in Year 8, when they are on average 12–13 years old (Australian Curriculum, Assessment and Reporting Authority, 2009).

As the focus of this chapter is to explore the transition to secondary school, the following children were excluded from all analyses:

- children who were still in primary school at Wave 5:
  - 204 children in Year 5 or Year 6 from NSW, Vic., Tas., NT, ACT;
  - 816 children in Year 5, Year 6 or Year 7 from Qld, SA, WA;
- children who were in their second or third year of secondary school at Wave 5:
  - 226 children in Year 8 or Year 9 from NSW, Vic., Tas., NT, ACT; and
  - 5 children in Year 9 from Qld, SA, WA.

Of the remaining 2,663 children who were in the first year of secondary school in Wave 5, 364 had not changed school since the previous wave.[2] For these 364 children it was not possible to investigate their experiences in transitioning to secondary school because they had not reported changing schools and so were not asked the set of questions about difficulties with the transition, which is the key outcome measure used in this chapter (see next section). After excluding these children, there were then 2,299 cases remaining for analyses. All analyses throughout the chapter were conducted with survey weights applied.

[1] Zeedyk et al. (2003) found that students and parents had similar views about the challenges facing the students with an upcoming transition to secondary school; however, their sample of British children (472 respondents) was much smaller than that available from LSAC.

[2] We used information about the school structure reported by children's teachers at Wave 4 to investigate the 364 cases that had not changed schools, and found that 264 children had remained at the same combined primary–secondary school when transitioning to secondary school in Wave 5. For an additional 100 cases it was not possible to determine their primary–secondary pathways (e.g., because they were in a primary-only school in Wave 4, then were in secondary school in Wave 5, but did not report changing schools in the meantime).

Measures of post-transition difficulties

There have been a range of measures of the success of children's transition to secondary school used in previous research. For example, West et al. (2010) asked students how well they coped with the first few weeks of secondary school (with response options from "very easy" to "very hard"), followed by specific items that they may have had trouble with. Rice, Frederickson, and Seymour (2010) used a measure that asked students about their "concerns about starting secondary school". This was asked twice—while the students were in primary school, and later, after the children had started secondary school. Waters, Lester, Wenden, and Cross (2012) used a measure that asked children to rate their transition experience from primary to secondary school (with response options from "difficult" to "easy").

The main measure of transition "success" used in this chapter is a question asked of children (in the child self-report component) and Parent 1s (which is most often their mothers) when they reported that they had changed schools since the previous wave. Children and Parent 1s were first asked whether the child had experienced any difficulties with changing schools. Those who reported that the child had experienced difficulties were asked if they had specific difficulties with:

- making new friends;
- missing friends from previous school;
- coping in a larger school with more students;
- dealing with more school subjects with different teachers;
- coping with more demanding schoolwork;
- being required to do more homework;
- managing different travel arrangements to/from school; and
- other.

Respondents answered each item with a "yes" or "no".

Measures of pre-transition factors

As outlined in the introduction, there are a number of pre-transition factors that may influence children's post-transition difficulties. These include socio-emotional wellbeing, temperament, academic performance, experiences in primary school, and parenting style and parental investment. Measures were derived from LSAC Wave 4 data and are presented in Table 5.1 (on page 87).

Control variables

It is possible that the amount of time between the beginning of the secondary school year and the LSAC interview may have affected children's (and their parent's) recall and reporting of events. Gillison, Standage, and Skevington (2008) found a meaningful improvement in the self-reported Quality of Life scale within the first 10 weeks of the first term of secondary school, and concluded that children adjust to the school transition relatively quickly. On the other hand, it is also possible that having their LSAC interview later in the year means that children have more time to experience more of the challenges of secondary school, and are therefore more likely to report them. Time between the beginning of the school year and interview date was calculated as the difference between Wave 5 interview date and the school starting date in the year when the child started secondary school.[3]

The study also controlled for child's age at the beginning of the school year and child's gender (see discussion in section 5.1).[4] All analyses throughout the chapter were conducted with survey weights applied.

[3] The term 1 start dates in 2012 varied between states/territories from 27 January to 5 February.

[4] More than half (51%) of the children were male. The mean age at the beginning of the secondary school year was 12.5 years. The mean time between the beginning of the secondary school year and the Wave 5 interview was 6 months.

Table 5.1: Variables for risk factors

Variable	Measure	Sample question/response options	Categories
Socio-emotional wellbeing			
Hyperactivity problems	Average of SDQ hyperactivity problem subscale (5 items)	Restless, overactive, cannot stay still for long; 1 (not true) to 3 (certainly true)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Emotional problems	Average of SDQ emotional problem subscale (5 items)	Many worries or often seems worried; 1 (not true) to 3 (certainly true)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Peer problems	Average of SDQ peer problem subscale (5 items)	Rather solitary, tends to play alone; 1 (not true) to 3 (certainly true)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Conduct problems	Average of SDQ conduct problem subscale (5 items)	Often fights with other children or bullies them; 1 (not true) to 3 (certainly true)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Total socio-emotional problems	Average of SDQ total problems	Total scores of SDQ hyperactivity, emotional, peer and conduct problems; 0 (low) to 40 (high)	
Prosocial behaviour	Average of SDQ prosocial subscale (5 items)	Considerate of other people's feelings; 1 (not true) to 3 (certainly true)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Temperament			
Reactivity	Average of SATI reactivity subscale (4 items)	Reacts strongly (cries or complains loudly) to a disappointment or failure; 1 (never) to 5 (always)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Persistence	Average of SATI persistence subscale (4 items)	Remembers to do homework without being reminded; 1 (never) to 5 (always)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Sociability	Average of SATI introversion subscale (reversed) (4 items)	Seems uncomfortable when at someone's house for the first time; 1 (never) to 5 (always) (reverse coded)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Academic performance			
Numeracy	Average of NAPLAN numeracy score	NAPLAN numeracy score	Year 5 NAPLAN scores
Reading	Average of NAPLAN reading score	NAPLAN reading score	Year 5 NAPLAN scores
Experiences in primary school			
School liking	Average of school adjustment scale (12 items)	My school is a place where I feel happy;1 (strongly disagree) to 4 (strongly agree)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)

continued on page 88

continued from page 87

Table 5.1: Variables for risk factors

Variable	Measure	Sample question/response options	Categories
Schoolwork enjoyment	Average of school avoidance scale (reverse) (3 items)	Do you like maths and number work at school? 1 = yes, 2 = sometimes, or 3 = no (reverse coded)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Approach to learning	Average of approach to learning scale (6 items)	How often did this child show eagerness to learn new things? 1 = never, 2 = sometimes, 3 = often, 4 = very often.	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Experience of unfriendly behaviours	Average of bullying scale (4 items)	Thinking back over the last 12 months, did another child or children pick on you by shoving, pushing or hitting you? 1 = yes, 0 = no	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Parenting style and parental investment			
Parental warmth	Average of parental warmth scale (6 items)	In the last 6 months how often did you tell this child how happy he/she makes you? 1 (never) to 5 (almost always/always)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Inductive reasoning	Average of inductive reasoning scale (5 items)	In the last 6 months how often did you talk it over and reason with this child when he/she misbehaved? 1 (never) to 5 (almost always/always)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Angry parenting	Average of hostile parenting scale (6 items)	How often are you angry when you punish study child? 1 (never/almost never) to 5 (all the time)	1 = highest (top 20%) 0 = lowest/average (rest 80%)
Consistent parenting	Average of consistent parenting scale (5 items)	When you give study child an instruction or request to do something, how often do you make sure that he/she does it? 1 (never/almost never) to 5 (all the time)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Parental self-efficacy	Average of parental self-efficacy scale (4 items)	Do you think that this child's behaviour is more than you can handle? 1 (never/almost never) to 5 (always/almost always)	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Parents and children talk about school	Average of parents and children talk about school activities score (single item)	How often do you and study child talk about his/her school activities? 1 = daily, 2 = a few times a week, 3 = about once a week, 4 = a few times a month, 5 = rarely or never	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)
Parental confidence in being able to help child with school	Average of feelings about guidance for study child score (3 items)	I know how to help my child do well in school; 1 (strongly agree) to 4 (strongly disagree)	1 = daily 0 = less frequent
Children's participation in extracurricular activities	Average of extracurricular activities score (8 items)	In the last 12 months has child regularly participated in any of the following activities? (e.g., team sport); 0 = no, 1 = yes	1 = lowest (bottom 20%) 0 = highest/average (rest 80%)

Note: *n* = 2,226. SDQ = Strengths and Difficulties Questionnaire; SATI = School-Age Temperament Inventory; NAPLAN = National Assessment Program – Literacy and Numeracy.
Source: LSAC K cohort, Wave 4

5.4 Difficulties experienced with the transition to secondary school

This section explores differences between children and their parents in whether they reported the child as having difficulties with the transition to a new secondary school. Table 5.2 shows that 17% of parents and 15% of children reported some type of difficulty with the study child's transition to secondary school.

Table 5.2 also shows the specific difficulties that children may have experienced with the transition to secondary school. In general, the proportions of parents and children reporting that children had difficulties with each of the items were similar and fairly small. However, the ranking of the items by frequency of reporting is different for the two groups. The difficulty most commonly reported by parents and children was with "making new friends" (7% of all parents and all children); and the least reported difficulties were with "managing different travel arrangements to/from school" and "other" experiences.

Table 5.2: Difficulties experienced with transition to secondary school, child and parent reports

Child reports	%	Parent reports	%
Any difficulties	**14.7**	**Any difficulties**	**17.4**
Specific difficulties experienced with transition		**Specific difficulties experienced with transition**	
Making new friends	6.9	Making new friends	7.2
Missing friends from previous school	6.7	Coping with larger school with more students	6.0
Being required to do more homework	4.3	Dealing with more school subjects with different teachers	5.7
Dealing with more school subjects with different teachers	3.9	Missing friends from previous school	5.6
Coping with larger school with more students	3.5	Coping with more demanding schoolwork	5.3
Coping with more demanding schoolwork	3.0	Being required to do more homework	3.6
Managing different travel arrangements to/from school	1.6	Other	3.5
Other	1.6	Managing different travel arrangements to/from school	1.6
Total no. of observations	2,166	Total no. of observations	2,299

Source: LSAC K cohort, Wave 5

For children, the next most commonly selected items were "missing their friends from their previous school" (second highest for children, fourth highest for parents) and "being required to do more homework" (third highest for children, sixth highest for parents). The next most commonly selected items for parents, on the other hand, were that their children had struggled with "coping with a larger school with more students" (second highest for parents, fifth highest for children) and with "dealing with more school subjects with different teachers" (third highest for parents, fourth highest for children). In addition, while the proportion of parents and children reporting difficulties with making new friends was very similar (around 7%), a larger proportion of children than parents reported difficulties with missing friends and being required to do homework; while parents were concerned more about the child dealing with a greater number of school subjects and coping with a larger school.

Overall, fewer children reported difficulties with school transition than their parents. Children more often said that they were having trouble missing their friends and with homework, whereas parents more frequently reported that their children were having trouble with factors related to the size and structure of secondary school.

The differences between the two respondent groups are explored in Table 5.3 (on page 90) in further detail. The table shows for each specific difficulty (and overall difficulties) whether both or neither the child and their parent reported it as a problem, or whether it was reported by the child only or parent only. Table 5.3 shows a similar pattern of results to those seen in Table 5.2. In 7% of families, only the child reported having difficulties, and in 9% of families, only the parent reported

the child having difficulties. Taken together, in 8% of families, both parent and child agreed that the child had experienced some sort of difficulty with the transition to secondary school, and 76% agreed that the child had not experienced difficulties.

Table 5.3: Difficulties experienced with transition to secondary school, by whether reported by children and/or parents

	Child only (%)	Parent only (%)	Both (%)	Neither (%)
Any difficulties	**6.8**	**9.4**	**7.8**	**76.0**
Specific difficulties experienced with transition				
Making new friends	4.1	4.2	2.9	88.9
Missing friends from previous school	4.2	3.1	2.5	90.2
Coping with larger school with more students	2.3	4.9	1.2	91.7
Dealing with more school subjects with different teachers	2.8	4.7	1.0	91.5
Coping with more demanding schoolwork	2.0	4.4	1.0	92.6
Being required to do more homework	3.4	2.8	0.9	92.9
Managing different travel arrangements to/from school	1.4	1.4	0.2	97.0

Note: $n = 2,166$.
Source: LSAC K cohort, Wave 5

Looking at specific difficulties, 3% of both parents and children agreed that the child had difficulties with "making new friends". However, 4% of children only and a further 4% of parents only reported that the child had this difficulty (i.e., for this 8% of children, the difficulty was only reported by either the parent or the child, but not both). Difficulties with missing friends from their previous school were more commonly reported by children only (4%) rather than parents only (3%). Conversely, difficulties coping with a larger school were more commonly reported by parents only (5%) than children only (2%). Again, however, the proportions of parents and children reporting difficulties were small.

Table 5.4 shows the percentage of children and parents reporting that children had multiple difficulties with the transition to a new secondary school. Eight per cent of parents reported that the study child had difficulty with only one aspect of the transition, while only 6% of the children reported one difficulty. The proportions for each of the child and parent groups were the same for two (4%), three (2%) and four (1%) difficulties. Two per cent of parents and 1% of children reported that children had difficulties with five or more aspects of the transition.

Table 5.4: Experience of multiple difficulties in transition to secondary school, child and parent reports

	Child reports (%)	Parent reports (%)
No difficulties	85.3	82.6
One difficulty	5.9	8.2
Two difficulties	4.3	3.7
Three difficulties	2.3	2.4
Four difficulties	1.4	1.2
Five or more difficulties	0.9	1.8
Total no. of observations	2,166	2,299

Note: Percentages may not total exactly to 100.0% due to rounding.
Source: LSAC K cohort, Wave 5

In summary, this section has shown that while the majority of children and parents did not report the child as having difficulties with the transition to secondary school, 15% of children and 17% of parents reported at least one difficulty (see Table 5.4). Both parents and children reported that the most common difficulty for children during the transition to secondary school was making new friends. Even though there was some discrepancy between child and parent responses, around 84% of parents and children were in agreement about how well the child had transitioned to secondary

school (i.e., 76% of parents and children agreed that the child did not experience any difficulties and 8% of children and parents agreed that the child experienced difficulties with the transition). It is also worth noting that in cases where difficulties were reported, it was relatively uncommon for them to be reported by both parties. For example, 2% of the children in the sample and 4% of their parents (a total of 6%) reported that the children had difficulty with coping with more demanding schoolwork; however, only 1% of children had this difficulty reported by both parties (see Table 5.3).

For all analyses reported in the remainder of this chapter, we use the overall measure of whether children had experienced any difficulties with the transition to a new secondary school, because of the relatively small number of respondents reporting difficulties with each of the specific experiences.

5.5 Exploring pre-transition factors associated with post-transition difficulties

This section aims to explore the characteristics and experiences of children that may be positively or negatively related to difficulties in transition to secondary school (discussed broadly in section 5.1). The following pre-transition characteristics and experiences are examined:

- socio-emotional wellbeing;
- temperament;
- academic performance;
- experiences in primary school; and
- parenting style and parental investment.

Children's characteristics and experiences were measured at Wave 4 when they were 10–11 years old, and child and parent reports of whether or not the child had experienced any difficulties transitioning to secondary school were taken at Wave 5 when they were 12–13 years old. Three steps were used to examine the associations between children's experiences of difficulties and each of the pre-transition characteristics and experiences:

1. Unadjusted association: We began by looking at the bivariate association between each pre-transition factor and children's post-transition difficulties.
2. Adjusted association: We then assessed the unique association between each pre-transition factor (e.g., hyperactivity) and children's post-transition difficulties, while adjusting for other pre-transition factors in the subset (e.g., other socio-emotional wellbeing variables), as well as the child's age, gender and time between the beginning of the secondary school year and their Wave 5 interview.
3. Joint significance: Because variables were highly inter-correlated with each other,[5] in addition to testing the robustness of the individual association between each variables and children's school transition within each model, Wald tests[6] were conducted to assess the joint influence of the five subsets of pre-transition characteristics and experiences while adjusting for all factors in the subset, if variables were not significantly associated with children's post-transition difficulties on their own (from step 2).

Analyses were conducted separately for child reports and parent reports of difficulties. Given that children's and parents' responses were not independent, comparisons between them were not performed.

Socio-emotional wellbeing

This section examines the relationship between children's post-transition difficulties reported at Wave 5 (12–13 years) and their socio-emotional wellbeing assessed at Wave 4 (10–11 years). Children's socio-emotional wellbeing was measured using the five separate subscales (peer

[5] Correlations between the variables socio-emotional wellbeing, temperament, academic performance, experiences in primary school, and parenting style and parental investment were measured by Pearson's correlation.

[6] The Wald test is used to test the joint significance of a subset of coefficients in a statistical model.

problems, conduct problems, hyperactivity, emotional problems and prosocial behaviours) of the SDQ. Children with high levels of hyperactivity, emotional problems, peer problems and conduct problems (top 20%) and low scores on the prosocial scale (bottom 20%) were compared to the remaining children. When interpreting the results, it should be kept in mind that children with "worse" scores (i.e., top 20% of hyperactivity) had *relatively* poorer socio-emotional wellbeing than other children. However, this does not mean that children with worse scores have clinically significant problems.

Unadjusted associations with post-transition difficulties

We begin by looking at the unadjusted differences in the percentages of child- and parent-reported difficulties by each socio-emotional wellbeing variable. As can be seen in Table 5.5, both child- and parent-reported post-transition difficulties were significantly different according to children's pre-transition socio-emotional wellbeing. Children whose parents rated them as having more socio-emotional problems (hyperactivity, emotional problems, peer problems and conduct problems) were more likely to experience difficulties transitioning to secondary school, as reported by both the parent and the study child. For example, 20% of children whose parents rated them high on the measure of conduct problems self-reported as having difficulties transitioning to secondary school, compared to 14% of children rated as low/average on the measure of conduct problems. Twenty three per cent of children with high scores on the conduct problems scale had parents who reported them as having difficulties with the transition to secondary school, compared to 17% of children whose parents rated them as low/average on the measure of conduct problems.

In addition, children who were rated low on the prosocial scale by their parents were more likely to report difficulties moving to secondary school (19%), compared to those rated more favourably on the prosocial scale (13%). A similar pattern is seen for parent-reported difficulties.

Table 5.5: Pre-transition socio-emotional wellbeing, by child- and parent-reported post-transition difficulties

Socio-emotional wellbeing (SDQ subscales)	Child reports of difficulties		Parent reports of difficulties	
	%	*p*	%	*p*
Hyperactivity problems	*n* = 2,009		*n* = 2,127	
Highest 20%	22.4	**	28.8	***
Remaining 80%	13.3		15.6	
Emotional problems	*n* = 2,009		*n* = 2,127	
Highest 20%	21.0	***	27.0	***
Remaining 80%	13.1		15.3	
Peer problems	*n* = 2,009		*n* = 2,127	
Highest 20%	23.1	***	26.2	***
Remaining 80%	13.3		16.3	
Conduct problems	*n* = 2,009		*n* = 2,127	
Highest 20%	19.7	*	23.0	**
Remaining 80%	13.6		16.5	
Prosocial behaviour	*n* = 2,009		*n* = 2,127	
Lowest 20%	19.2	*	20.9	*
Remaining 80%	13.3		16.8	

Notes: Sample sizes vary due to missing cases. *p* values refer to the significance of differences in proportions from chi-square tests: * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

Adjusted associations with post-transition difficulties

We then tested the robustness of the associations between children's socio-emotional wellbeing and their post-transition difficulties, adjusting for all the socio-emotional wellbeing variables (hyperactivity, emotional problems, peer problems, conduct problems and prosocial skills), as well as the child's age, gender and time between the beginning of school and the Wave 5 interview (Table 5.6 on page 93).

Table 5.6: Unique and joint significance of association between children's pre-transition socio-emotional wellbeing and reported post-transition difficulties

Reports of difficulties	Unique significance [a]					Joint significance [b]
	Hyperactivity problems	Emotional problems	Peer problems	Conduct problems	Prosocial behaviour	
Child reports	ns	ns	*	ns	ns	*
Parent reports	**	**	ns	ns	ns	ns

Note: [a] Multivariate analysis was performed to test the unique association between children's pre-transition socio-emotional wellbeing and reported post-transition difficulties. [b] Wald tests performed to assess the joint significance of variables that are individually insignificant. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and their Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

The association between children's peer problems and child-reported post-transition difficulties remained significant after adjusting for the five socio-emotional wellbeing variables as well as the child's age, gender and time between the beginning of school and the Wave 5 interview. The associations between child-reported post-transition difficulties and the other four socio-emotional wellbeing variables were no longer significant in the adjusted model. However, hyperactivity and emotional problems remained significantly associated with children's post-transition difficulties as reported by the parent in the adjusted model. Parents of children with higher levels of hyperactivity and emotional problems were more likely to report that their child experienced difficulties with this transition after adjusting for other socio-emotional wellbeing variables and the child's age, gender and time between the beginning of school and the Wave 5 interview.

Joint significance of socio-emotional wellbeing variables

The socio-emotional difficulty variables (hyperactivity, emotional problems, peer problems and conduct problems) were related to each other.[7] As a result, while each of the SDQ subscales were associated with difficulties with the transition to secondary school when included in the unadjusted models (Table 5.5), some were no longer significantly related to children's difficulties during transition when all five socio-emotional wellbeing variables were included in one model (Table 5.6). Therefore, the joint influence of these variables was also tested in the model, adjusting for all the variables in the socio-emotional wellbeing subset.

The results indicate that, as a group, hyperactivity, emotional problems, conduct problems and prosocial skills were jointly significant in explaining child-reported difficulties, even after peer-problems was taken into account. However, for parent-reported difficulties, peer problems, conduct problems and prosocial skills, taken as a group, were not significant predictors.

Temperament

In this section, the role of children's temperament assessed at Wave 4 (10–11 years) in their experiences during school transition reported at Wave 5 (12–13 years) is examined. Children in the top 20% of the reactivity subscale and bottom 20% of the persistence and sociability subscales of SATI were compared to others.

Unadjusted associations with post-transition difficulties

Table 5.7 (on page 94) shows that two of the three measures of temperament were significantly associated with both child- and parent-reported difficulties. Children whose parents rated them as high on the measure of reactivity and low on the measure of persistence were significantly more likely to report difficulties transitioning to secondary school, as reported by children and their parents. However, low levels of sociability did not show any significant association with the success of transition to secondary school. A similar pattern is seen for parent-reported difficulties.

[7] Socio-emotional difficulty variables were moderately to highly correlated to each other; Pearson's correlation coefficients ranged from 0.35 to 0.52.

Table 5.7: Pre-transition temperament, by child- and parent-reported post-transition difficulties				
	Child reports of difficulties		Parent reports of difficulties	
Temperament (SATI subscales)	%	*p*	%	*p*
Reactivity	*n* = 2,010		*n* = 2,128	
Highest 20%	20.4	*	22.7	*
Remaining 80%	13.8		16.9	
Persistence	*n* = 2,010		*n* = 2,127	
Lowest 20%	20.4	**	26.4	***
Remaining 80%	12.9		14.9	
Sociability	*n* = 2,010		*n* = 2,128	
Lowest 20%	17.3	ns	19.9	ns
Remaining 80%	14.3		17.4	

Notes: Sample sizes vary due to missing cases. *p* values refer to the significance of differences in proportions from chi-square tests: * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.
Source: LSAC K cohort, Waves 4 and 5

Adjusted associations with post-transition difficulties

Children's reactivity, persistence and sociability, as well as child age, gender and time between the beginning of school and the Wave 5 interview were included in one regression model to assess the unique association of each temperament variable with children's post-transition difficulties.[8] As Table 5.8 shows, children's persistence was significantly related to both child- and parent-reported difficulties over and above other variables. On the other hand, reactivity and sociability were not statistically significant.

Joint significance of temperament variables

We then tested the joint significance of reactivity and sociability in the model, adjusting for all three temperament variables (Table 5.8). Together the two temperament characteristics were not significantly related to children's post-transition difficulties, as reported by both children and their parents.

Table 5.8: Unique and joint significance of association between children's pre-transition temperament and reported post-transition difficulties				
Reports of difficulties	Unique significance [a]			Joint significance [b]
	Reactivity	Persistence	Sociability	
Child reports	ns	**	ns	ns
Parent reports	ns	***	ns	ns

Note: [a] Multivariate analysis was performed to test the unique association between children's pre-transition temperament and reported post-transition difficulties. [b] Wald tests were performed to assess the joint significance of variables that are individually insignificant. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and their Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.
Source: LSAC K cohort, Waves 4 and 5

Academic performance

This section explores how children's post-transition difficulties are related to their pre-transition academic performance, as indicated by the NAPLAN reading and numeracy scores in Year 5.

Unadjusted differences in children's academic performance

As can be seen in Table 5.9 (on page 95), for child-reported difficulties, the difference was only statistically significant for children's numeracy performance. Differences in children's reading performance were not significantly associated with child-reported post-transition difficulties. For

[8] Temperament variables were related to each other; Pearson's correlation coefficients ranged from –0.39 to 0.15.

parent-reported difficulties, children with higher reading scores were less likely to have difficulties than children with lower reading scores.

Table 5.9: Year 5 NAPLAN numeracy and reading scores, by child- and parent-reported post-transition difficulties

Academic performance (NAPLAN)	Child reports of difficulties		Parent reports of difficulties	
	Mean score	*p*	Mean score	*p*
Numeracy	*n* = 1,841		*n* = 1,949	
Difficulties reported	487.6	*	491.0	ns
Difficulties not reported	501.1		500.9	
Reading	*n* = 1,857		*n* = 1,964	
Difficulties reported	505.8	ns	494.0	*
Difficulties not reported	498.3		506.2	

Notes: Sample sizes vary due to missing cases. *p* values refer to the significance of differences in proportions from bivariate regression tests: * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.
Source: LSAC K cohort, Waves 4 and 5

Adjusted associations with post-transition difficulties

Children's Year 5 reading and numeracy scores were included in one regression model simultaneously (Table 5.10). After adjusting for child's age, gender and the time between the beginning of the secondary school year and the Wave 5 interview, children's numeracy performance continued to show a significant association with child-reported difficulties with the transition to secondary school. Children with lower scores on the NAPLAN measure of numeracy skills were more likely to later self-report as having difficulties transitioning to secondary school. However, children's academic performance was no longer significantly associated with parent-reported difficulties.

Joint significance of academic performance

Given children's numeracy and reading performances were highly correlated,[9] the joint significance of these two variables in explaining parent-reported difficulties was also tested. Table 5.10 shows children's numeracy and reading performance on NAPLAN were not jointly significant in influencing parent-reported difficulties after adjusting for children's age, gender and time between the beginning of school and the Wave 5 interview.

Table 5.10: Unique and joint significance of association between children's pre-transition academic performance and reported post-transition difficulties

Reports of difficulties	Unique significance [a]		Joint significance [b]
	Numeracy	Reading	
Child reports	*	ns	not tested
Parent reports	ns	ns	ns

Note: [a] Multivariate analysis was performed to test the unique association between children's pre-transition academic performance and reported post-transition difficulties. [b] Wald tests were performed to assess the joint significance of variables that are individually insignificant. The joint significance of academic performance to child-reported difficulties was not tested because reading is the only variable that is not individually significant. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and their Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.
Source: LSAC K cohort, Waves 4 and 5

Experiences in the last years of primary school

This section looks at elements of children's experiences in primary school and examines whether they are associated with how well children transition to secondary school. Children with more

[9] Variables of previous experiences in primary school were highly related to each other; Pearson's correlation coefficients ranged from –0.10 to –0.52.

negative experiences in primary school were compared to those with more favourable experiences in terms of whether or not they and their parents reported them as having difficulties transitioning to secondary school.

Unadjusted associations with post-transition difficulties

Table 5.11 shows the same pattern of results for both child- and parent-reported difficulties; all primary-school related variables had a significant association with both child- and parent-reported difficulties with the transition to secondary school.

Table 5.11: Pre-transition experiences in primary school, by child- and parent-reported post-transition difficulties

	Child reports of difficulties		Parent reports of difficulties	
Experiences in primary school	**%**	***p***	**%**	***p***
School liking	*n* = 1,994		*n* = 2,105	
Lowest 20%	20.6	***	25.1	***
Remaining 80%	13.0		15.5	
Schoolwork enjoyment	*n* = 1,998		*n* = 2,109	
Lowest 20%	21.4	**	27.6	**
Remaining 80%	14.0		16.8	
Approach to learning	*n* = 1,632		*n* = 1,722	
Lowest 20%	20.6	**	25.1	***
Remaining 80%	13.2		15.0	
Experience of unfriendly behaviours	*n* = 2,008		*n* = 2,121	
Highest 20%	18.4	***	21.9	***
Remaining 80%	12.1		14.9	

Notes: Sample sizes vary due to missing cases. *p* values refer to the significance of differences in proportions from chi-square tests: * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.
Source: LSAC K cohort, Waves 4 and 5

Children who reported liking primary school or enjoying schoolwork the least were more likely to be reported by the child or the parent as experiencing difficulties moving to secondary school. Children whose teachers rated them as having a lower level of positive learning behaviours were more likely to self-report as having problems transitioning to secondary school (21%, compared to 13% of children with average/high scores on the measure of approach to learning). Similar results were observed in parent-reported post-transition difficulties.

Children who reported experiencing more types of unfriendly behaviour in primary school were more likely to self-report and have parents report them as having difficulties transitioning to secondary school, compared to those who reported an average/low number of types of experiences of unfriendly behaviour.

Adjusted associations with post-transition difficulties

Multivariate analyses were then performed to test the robustness of the associations between children's pre-transition school experiences and their post-transition difficulties. Significant results of multivariate analyses are reported in Table 5.12 (on page 97).

After adjusting for all the variables of school liking, schoolwork enjoyment, approach to learning and experience of unfriendly behaviours, as well as the child's age, gender and time between the start of school and interview, it was found that child-reported school liking in primary school was significantly related to both child- and parent-reported difficulties, over and above other factors. That is, those who liked primary school were less likely to experience difficulties during the transition to secondary school.

The teacher-rated approach to learning in primary school continued to show a significant association with parent-reported (but not child-reported) difficulties. Children who were rated as having less positive learning behaviours by their teacher were significantly more likely to be identified by their parents as having difficulties during transition.

Joint significance of experiences in primary school

The four variables of previous experiences in primary school were highly correlated with each other.[10] The joint significance of all variables that did not show unique significance was tested. Together the variables had a statistically significant influence on the likelihood of children's success in transition to secondary school, as reported by children (Table 5.12). This suggests that children who had overall positive experiences in primary school generally experienced fewer difficulties transitioning to secondary school. However, schoolwork enjoyment and experiences of unfriendly behaviours were not significantly related to parent-reported difficulties.

Table 5.12: Unique and joint significance of association between children's pre-transition experiences in primary school and reported post-transition difficulties

	Unique significance [a]				
Reports of difficulties	School liking	Schoolwork enjoyment	Approach to learning	Experience of unfriendly behaviours	Joint significance [b]
Child reports	*	ns	ns	ns	*
Parent reports	*	ns	**	ns	ns

Notes: [a] Multivariate analysis was performed to test the unique association between children's pre-transition experiences in primary school and reported post-transition difficulties. [b] Wald tests were performed to assess the joint significance for variables that are individually insignificant. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and their Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

Parenting style and parental investment

This section looks at how elements of parenting style and parental investment (measured when children were 10–11 years old) are associated with children's post-transition difficulties two years later.

Unadjusted associations with post-transition difficulties

Table 5.13 (on page 98) presents a descriptive overview of children's post-transition difficulties according to their experience of parenting style (e.g., warm parenting, consistent parenting, angry parenting) and level of parental investment (e.g., in extracurricular activities). Both child- and parent-reported post-transition difficulties were significantly different according to angry parenting. Parents who rated themselves as having high scores on the measure of "angry parenting" had children who were significantly more likely to self-report having difficulties transitioning to secondary school. Parents who scored in the top 20% on the measure of angry parenting were also more likely to later report that their child had struggled with the move to secondary school.

Parents who reported being less confident about their abilities to support their children with school also had children who were significantly more likely to self-report having difficulties with the transition. In addition, children were less likely to report post-transition difficulties if their parent reported confidence in being able to help them to do well with school. However, parent-reported difficulties were not significantly different according to their confidence in being able to help them to do well with school.

There were no significant differences in children's post-transition difficulties associated with the other measures of parenting style (parental warmth, inductive reasoning, consistent parenting and parenting self-efficacy). Child-reported difficulties were also not significantly different according to how frequently they talked with their parent about school-related activities, or how many extracurricular activities they participated in.

[10] Variables of previous experiences in primary school were highly related to each other; Pearson's correlation coefficients ranged from –0.10 to –0.52.

Table 5.13: Pre-transition parenting style and parental investment, by child- and parent-reported post-transition difficulties

Parenting style and parental investment	Child reports of difficulties		Parent reports of difficulties	
	%	*p*	%	*p*
Parental warmth	*n* = 2,009		*n* = 2,127	
Lowest 20%	16.7	ns	18.2	ns
Remaining 80%	14.3		17.7	
Inductive reasoning	*n* = 2,009		*n* = 2,127	
Lowest 20%	13.9	ns	15.0	ns
Remaining 80%	15.0		18.6	
Angry parenting	*n* = 2,009		*n* = 2,127	
Highest 20%	18.2	*	22.7	**
Remaining 80%	13.4		15.8	
Consistent parenting	*n* = 2,009		*n* = 2,127	
Lowest 20%	15.8	ns	16.9	ns
Remaining 80%	14.4		20.5	
Parental self-efficacy	*n* = 2,008		*n* = 2,126	
Lowest 20%	17.3	ns	24.4	***
Remaining 80%	13.9		15.6	
Parents and children talk about school	*n* = 2,016		*n* = 2,137	
Daily	14.5	ns	17.3	ns
Less frequent	15.0		19.8	
Parental confidence in being able to help child with school	*n* = 2,006		*n* = 2,123	
Lowest 20%	19.6	*	22.0	ns
Remaining 80%	13.9		17.1	
Children's participation in extracurricular activities	*n* = 2,024		*n* = 2,145	
Lowest 20%	13.9	ns	19.4	ns
Remaining 80%	15.0		16.5	

Notes: Sample sizes vary due to missing cases. *p* values refer to the significance of differences in proportions from chi-square tests: * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

Adjusted associations with post-transition difficulties

It was then investigated whether the significant differences in the associations between parenting behaviours and child- and parent-reported difficulties seen in Table 5.13 remained significant after adjusting for all of the examined parenting variables. Multivariate models were conducted separately for child-reported and parent-reported difficulties, including all of the parenting style and parental investment variables, the child's age, gender and time between the beginning of the secondary school year and the Wave 5 interview.

The results (Table 5.14 on page 99) indicate that none of the associations between child-reported difficulties and individual parenting variables remained significant after all other variables were taken into account. However, parental self-efficacy continued to be related to children's experiences of difficulties as reported by parents, over and above other variables.

Joint significance of parenting style and parental investment

As can be seen in Table 5.14, the joint significance of variables in the subset of parenting style and parental investment was not significant on child-reported difficulties. On the other hand, parental warmth, inductive reasoning, angry parenting (reversed) and consistent parenting showed significant combined influence on parent-reported difficulties after adjusting for parenting efficacy.[11]

[11] The influence of other parenting variables—such as "parents and children talk about school activities", "parental confidence in being able to help child with school" and "children's participation in extracurricular activities"—possibly cancel each other out due to time constraints and not being jointly significant.

Table 5.14: Unique and joint significance of association between children's pre-transition experiences of primary school and reported post-transition difficulties

Reports of difficulties	Unique significance [a]					Joint significance [b]
	Parental warmth	Inductive reasoning	Angry parenting	Consistent parenting	Parental self-efficacy	
Child reports	ns	ns	ns	ns	ns	ns
Parent reports	ns	ns	ns	ns	*	*

Note: [a] Multivariate analysis was performed to test the unique association of parenting style and parental investment and post-transition difficulties. [b] Wald tests were performed to assess the joint significance of variables that are individually insignificant. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and the Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

Overall factors related to a successful transition to a new secondary school

This final section determines which of the pre-transition characteristics and experiences examined in previous sections (socio-emotional wellbeing, temperament, academic performance, experiences in primary school, and parenting style and parental investment) are the most important factors associated with a successful transition to secondary school. As discussed previously, SDQ problem variables (hyperactivity, emotional problems, peer problems, conduct problems) were highly inter-correlated and, as a group, significantly accounted for variation in both child- and parent-reported difficulties. Therefore, the total score of SDQ problem scales was used rather than including each individual SDQ problem.

Adjusted associations with post-transition difficulties in a fully adjusted model

A final set of analyses was run containing all the variables of socio-emotional wellbeing (SDQ total problem score and pro-social score), temperament, academic performance, experiences in primary school and parenting behaviours; and taking into account the child's age, gender and the time between the beginning of the school year and the Wave 5 interview. The "unique significance" column of Table 5.15 (on page 100) reports unique associations of each pre-transition factor with children's post-transition difficulties in the fully adjusted model.

When all the variables were taken into account, we found that:

- behavioural and emotional problems as measured by the total SDQ problem scores showed a significant association with both child- and parent-reported difficulties; and
- children's participation in extracurricular activities showed a significant association with parent-reported difficulties (but not child-reported difficulties) during the transition to secondary school.

Joint significance of each subset in a fully adjusted model

The joint significance of each subset of variables was also tested. Variables that did not show unique significance in the fully adjusted model were included in each subset. Since the SDQ total problem scores showed a significant unique association with both child- and parent-reported difficulties in the fully adjusted model, a test of the joint effect of socio-emotional wellbeing was not performed. The influence of each of the four subsets of variables—temperament, academic performance, experiences in primary school, and parenting style and parental investment (except children's participation in extracurricular activities)—on the post-transition difficulties were tested as a group, taking the other subsets into account as well as the child's age, gender and the time between the start of school and the Wave 5 interview. The results of these tests (reported in the "joint significance" column of Table 5.15) indicate that:

- child temperament variables (hyperactivity, persistence and reactivity) were not significant as a group in influencing child- or parent-reported difficulties with transitioning into secondary school;

- children's experiences in primary school (liking school, enjoying schoolwork, approach to learning and experiences of unfriendly behaviours) were jointly significant in shaping parent-reported (but not child-reported) difficulties during school transition; and
- the combined effect of parenting variables (parental warmth, inductive reasoning and angry parenting, etc.) on children's post-transition difficulties was not significant.

Table 5.15: Unique and joint significance of association between children's pre-transition factors and reported post-transition difficulties

	Child reports		Parent reports	
	Unique significance [a]	Joint significance [b]	Unique significance [a]	Joint significance [b]
Socio-emotional wellbeing				
Total socio-emotional problems	***	not tested	**	not tested
Prosocial behaviour	ns		ns	
Temperament				
Reactivity	ns		ns	
Persistence	ns	ns	ns	ns
Sociability	ns		ns	
Academic performance				
Numeracy	ns	ns	ns	ns
Reading	ns		ns	
Experiences in primary school				
School liking	ns		ns	
Schoolwork enjoyment	ns	ns	ns	*
Approach to learning	ns		ns	
Experience of unfriendly behaviours	ns		ns	
Parenting style and parental investment				
Parental warmth	ns		ns	
Inductive reasoning	ns		ns	
Angry parenting	ns		ns	
Consistent parenting	ns		ns	
Parental self-efficacy	ns	ns	ns	ns
Parents and children talk about school	ns		ns	
Parental confidence in being able to help child with school	ns		ns	
Children's participation in extracurricular activities	ns		*	

Notes: [a] Multivariate analysis was performed to test the unique association between socio-emotional wellbeing, temperament, academic performance, experiences in primary school and parenting styles and parental investment variables. [b] Wald tests performed to assess the joint significance of variables that are individually insignificant, while adjusting for all the variables; the joint effect of socio-emotional wellbeing was not tested because prosocial behaviour was the only variable that was individually insignificant in the subset. Analyses adjusted for child's age, gender and time between the beginning of the secondary school year and the Wave 5 interview. * $p < .05$, ** $p < .01$, *** $p < .001$, ns = not significant.

Source: LSAC K cohort, Waves 4 and 5

5.6 Discussion

This chapter aimed to increase understanding of the most vulnerable children during the transition from primary to secondary school. Using a nationally representative sample, the frequency with which children and their parents reported the child as having a variety of difficulties transitioning to secondary school was analysed.

The results showed that a relatively small proportion of children, and a slightly higher (but still small) proportion of parents, reported the child having difficulties with the transition to secondary school. Building new friendships was the most common difficulty reported by children and their

parents. This finding is consistent with previous studies showing that, at a time when friendships and social interaction are particularly important for children, the disruption of friendship networks can pose real challenges, and thereby interfere with their adjustment to a new environment as well as their success in academic achievement (Barone, Aguire-Deandis, & Trickett, 1991). In addition, although children more commonly said they had difficulties with missing their old friends, parents more often reported that their children were having trouble with factors related to the demands of learning tasks and the structure of secondary school (e.g., dealing with the increased number of school subjects and different teachers cf. primary school).

A range of characteristics and experiences of children's lives were considered in order to investigate the individual, as well as the combination of, pre-transition factors associated with post-transition difficulties children experienced. Variables that were included in this chapter were highly inter-correlated. As a result, very few factors showed significant associations with children's experiences of difficulties when the other variables were taken into account. The key factors that were independently related to child- or parent-reported difficulties after adjusting for other factors that are known to influence children's school transition were emotional and behavioural difficulties, children's experiences in primary school and their participation in extracurricular activities.

Among all the factors examined in this chapter, children's emotional and behavioural problems appeared to have the most important influence on children's difficulties transitioning to secondary school. Peer problems, hyperactivity and emotional problems appeared to be particularly important among the variables of socio-emotional wellbeing. Peer problems played an important role in shaping children's experiences of difficulties during school transition, as reported by the study child. It has been reported that peer problems are strongly associated with children's concerns about secondary school (Rice et al., 2010). Kingery, Erdley, and Marshall (2011) also found that pre-transition peer factors—such as peer acceptance and number of friends—predicted post-transition loneliness, self-esteem, school involvement and academic achievement. Given that friendship is a major challenge faced by many children during their transition to secondary school, children with fewer peer problems are more likely to overcome this challenge.

In addition, hyperactivity was associated with parent-reported difficulties. Children's hyperactivity has been found to predict both academic failure and behavioural problems. For example, based on their study of 101 children between the ages of 6 and 11, McConaughy, Volpe, Antshel, Gordon, and Eiraldi (2011) reported that children with attention deficit hyperactivity disorder (ADHD) not only had significantly lower reading, mathematics and written language scores, but were also rated by their parents and teachers as having lower social skills and social adaptive ability than children without ADHD. Although in this chapter, children who had high hyperactivity (top 20%) in our analysis are not necessarily in the clinical range of this behavioural problem, their parents consider them as more distractible than other children and therefore more likely to have trouble putting the needed attention and effort into extra learning tasks in secondary school.

Children with more emotional problems (e.g., having many worries) also experienced more difficulties than children with fewer emotional problems, as reported by their parent. This is in concordance with findings by West el al. (2010), who found that children with anxiety and low self-esteem were more likely to struggle in the transition to secondary school. As discussed earlier, the most commonly reported difficulty by both children and their parents was related to friendship. It is to be expected that children with higher scores on socio-emotional problem scales will be more likely to experience more of these types of difficulties.

Analyses revealed a significant relationship between children's pre-transition persistence and post-transition difficulties after adjusting for reactivity and sociability. This suggests that children's persistence was the most important temperament factor associated with child- and parent-reported difficulties. Children rated by their parents as having low levels of persistence were more likely to be reported by their parents as having difficulties with the transition to secondary school. The ability to work towards the completion of a task and not give up easily has been identified as a key non-cognitive skill that is linked to both school achievement (Mokrova, O'Brien, Calkins, Leerkes, & Marcovitch, 2013) and labour market outcomes (Heckman, Stixrud, & Urzua, 2006). Both children and their parents reported the demands of learning and schoolwork as difficulties during the transition to secondary school. However, children who are more persistent may be more capable of taking on the additional learning tasks in secondary school, and less likely to experience difficulties. The relationship between children's persistence and their post-transition difficulties was

no longer significant in the fully adjusted model. This suggests that while there is an association between children's persistence and post-transition difficulties, there are other factors that have a stronger influence, such as children's socio-emotional wellbeing and parental investment.

The extent to which children enjoy going to primary school appeared to be the most important factor of their previous school experiences. The significant association between "child-reported school liking" at age 10–11 and both child- and parent-reported difficulties with moving to secondary school points to the importance of a child's engagement in primary school for their later success in transitioning to secondary school. This finding is similar to that of West et al. (2010), who found that school disengagement during primary school was a significant risk factor for a poor transition to secondary school. Further research is needed to examine the factors that are associated with school liking itself. In the fully adjusted model, the relationship between children's experiences in primary school and parent-reported post-transition difficulties was no longer significant. This implies that other factors, such as the child's socio-emotional wellbeing, may have a stronger association with parent-reported difficulties than children's previous school experiences does.

In terms of parenting styles, parental investment in children's extracurricular activities was found to significantly influence parents' (but not children's) reports of post-transition difficulties in the fully adjusted model, when other factors were taken into consideration. The parenting factors of self-efficacy, angry parenting and parental confidence in being able to help their child with school were also related to child- and parent-reported difficulties. However, the relationships between these factors and children's post-transition difficulties were no longer significant in the fully adjusted model, when other factors such as children's socio-emotional wellbeing and experiences in primary school were taken into account.

In contrast with previous studies, a number of factors were not significantly associated with the difficulties reported by children and their parents, when they are analysed in the context of other variables. For example, academic ability had been found to predict the success of children's transition to secondary school (Serbin et al., 2013). However, children's reading performance, as well as teacher-rated learning behaviours in primary school were not identified as significant factors in this chapter. In addition, children's experiences of unfriendly behaviours in primary school were not found to be associated with the difficulties children had during transition, while Bailey and Baines (2012) reported that students who had been victims of bullying were more likely to have trouble with the transition.

It should be noted that some variables were not independently related to child- and parent-reported difficulties once other characteristics were taken into account. However, these variables should not be ignored as the combination of variables jointly explained the variation in children's success in making the transition to secondary school. For example, although individual measures of hyperactivity, emotional problems, conduct problems and prosocial skills were not significantly associated with children's reports of post-transition difficulties, these four variables as a group were jointly significant, suggesting that children who have overall positive socio-emotional wellbeing tend to have a smoother transition.

Although the time between the beginning of the secondary school year and the time of the children's LSAC interview at Wave 5 was controlled for, it would be beneficial to investigate this issue in further detail. In particular, it would be useful to investigate whether children and/or parents are more likely to report difficulties with the transition to secondary school earlier or later in the year. For example, it is possible that parents are observant of children's success in transitioning to secondary school earlier in the year, and that they do not realise that the process may take longer. Rice et al. (2010) found that students adapt to the organisational aspects of secondary school (e.g., finding their way around, having multiple teachers) more quickly than other aspects such as social structures and the more challenging schoolwork. The timing of the interview may therefore have more nuanced effects on particular aspects of the transition that are worth exploring further.

It would also be informative to investigate the success of children's transitions to secondary school using other measures from LSAC; for example, using teacher reports. Waters et al. (2012) found that 31% of students reported that the transition to secondary school was *difficult* or *somewhat difficult*, which is almost double the percentage that reported having any difficulties in this chapter. This demonstrates the effect that even slight variations in wording can have, and reinforces the importance of looking at multiple aspects of "success". Using measures from teachers to assess how well students navigate the transition to secondary school is likely to reveal different variables as

important; Bailey and Baines (2012) found that teacher ratings of poor transitions were associated with behaviour, maths attainment and speaking English as a second language.

It is possible that some of the difficulties that arise around this time, and which were associated with difficulties transitioning to a new secondary school in this chapter, are not related to the transition to secondary school *per se*, but rather are normal developmental changes that occur around adolescence (Bru, Stornes, Munthe, & Thuen, 2010). Investigating alternative measures of transition "success" would also enable comparison with students who did not change schools to start secondary school (this group of students was excluded from this chapter).

In all, this chapter has used an extremely rich data source to shed light on aspects of children's lives that are important during a time of great change as they move from primary to secondary school. Children's experiences of the transition from primary to secondary school may have long-term influences on their wellbeing, educational attainment and career choices (Speering & Rennie, 1996; West et al., 2010). As children's experiences of the primary to secondary school transition have long-term influences on their wellbeing and educational attainment (West, Sweeting, & Young, 2010), the value of LSAC will be further demonstrated as we continue to follow the students through their later secondary school years and beyond.

5.7 References

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The educational expectations of Australian children and their mothers

6

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6.1 Introduction

It is widely recognised in educational research that the educational expectations of parents and children are important factors in predicting children's educational achievements and occupational outcomes (Beutel & Anderson, 2008; Davis-Kean, 2005; Englund, Luckner, Whaley, & Egeland, 2004; Hannum, Kong, & Zhang, 2009; Jacobs, Chhin, & Bleeker, 2006; Marjoribanks, 2002; Neuenschwander, Vida, Garrett, & Eccles, 2007; Sandefur, Meier, & Campbell, 2006; Trusty, Plata, & Salazar, 2003; Zhang, Kao, & Hannum, 2007). Much research examining the disparities in educational attainment among children has shown that although families vary in terms of resources they provide to children (number of books, extracurricular activities, reading to the child, etc.), the conventional measures of family socio-economic background alone (parental education, family income) cannot explain the variations in home learning environments that lead to these disparities (Casanova, García-Linares, de la Torre, & Carpio, 2005; Martini & Sénéchal, 2012; Teachman & Paasch, 1998). Children's educational attainment also appears to be related to parents' expectations for what their child will achieve educationally, irrespective of family background and socio-economic status (Buchmann & Dalton, 2002; Eccles & Wigfield, 2002).

Parents with high expectations for their children can compensate for a lack of financial and human resources "by demonstrating more optimistic expectations for their children, which can serve to increase children's own expectations, and eventual school attainment" (Zhang, 2012, pp. 4–5). This effect also appears to have long-term influences on children's lives in adulthood (Flouri & Hawkes, 2008; Jacobs et al., 2006). For instance, Flouri and Hawkes found that mothers' expectations for their daughters' educational attainment at the age of 10 were positively related to their daughters' sense of control and income at the age of 30.

Children also develop their own expectations for their educational achievement. These expectations are strongly related to parents' expectations and are important for children's learning motivation and achievement (Nicholson, Putwain, Connors, & Hornby-Atkinson, 2013). A number of studies have found that students with higher educational expectations tend to have higher levels of educational attainment and better labour market outcomes. Students' educational expectations at age 14 predicted actual attainment by age 26 (Mello, 2008). Similarly, a more recent study found that students' expectations in 10th grade (equivalent to Year 10 in Australia) uniquely predicted their post-secondary status four years later, over and above parents' and teachers' expectations (Gregory & Huang, 2013).

Considering that the educational expectations of both parents and their children are strongly related to children's academic achievements, it is important to investigate the factors that shape these expectations. Both sets of expectations have been found to vary socially and ethnically (Davis-Kean, 2005; Gill & Reynolds, 2000; Glick & White, 2004). First, parental education has been shown to be an important predictor of parental expectations (Gill & Reynolds, 2000). Specifically, parents with higher levels of education have higher expectations for their children's educational attainment and are more involved in their children's education than parents with lower levels of education. In addition, Kim, Sherraden, and Clancy (2013) found that, in the US, non-Hispanic white mothers of newborn children hold higher educational expectations for their children than African Americans, Native Americans and Hispanics. These differences disappear, however, when socio-economic

characteristics are considered. In addition, Davis-Kean (2005) found that family income significantly affects children's achievement through parental expectations.

The educational expectations of children are also expected to vary based on family and social factors. For instance, girls have been reported to hold higher educational expectations than boys (Mau & Bikos, 2000). Perceived racial barriers were found to be associated with lower educational expectations among female African-American students (Wood, Kurtz-Costes, & Copping, 2011). And students from lower income families tend to express more limited educational expectations than their higher income peers (Sandefur et al., 2006).

Another study using the National Educational Longitudinal Study (NELS) in the United States reported that immigrant and second-generation youth are more likely than their third or higher generation peers to have higher educational expectations and go on to post-secondary education, despite their families' socio-economic characteristics (Glick & White, 2004).

In Australia, there has been a focus on admitting higher skilled migrants, and children of immigrants tend to perform better on cognitive assessments than in the UK and US (Washbrook, Waldfogel, Bradbury, Corak, & Ghanghro, 2012). Immigration background has been found to be an important predictor for students' aspirations to complete Year 12. Using data from the Longitudinal Surveys of Australian Youth (LSAY), Gemici, Bednarz, Karmel, and Lim (2014) reported that both first-generation and foreign-born students were more likely to have the intention to complete Year 12 than Australian-born students.

Most studies of students' educational expectations have focused on adolescents in upper high school (Gemici et al., 2014; Gregory & Huang, 2013; Turcios-Cotto & Milan, 2012). Only a limited number of studies have addressed the educational expectations of children during the early years of secondary school. In addition, less is known about other factors, such as grandparents' education and child's school characteristics, that may be tied to parents' and children's educational expectations. Levels of earnings, education, occupational status and health behaviours have been found to persist across generations (d'Addio, 2007). Using LSAC data, Hancock, Edwards, and Zubrick (2013) reported that children with family histories of joblessness and separation achieved lower scores on academic assessments than their peers, but they did not examine the influence of grandparents' educational backgrounds. Further investigation of the factors that contribute to children's expectations for their academic achievements is needed.

In addition, children's actual school performance can influence the expectations of both children and their parents. A study of 14,376 students, using data from the National Education Longitudinal Study (NELS), reported that both adolescents and their parents adjust their educational aspirations according to the student's academic achievement (Zhang, Haddad, Torres, & Chen, 2011). As children progress through school, their academic abilities, as measured by standardised tests and reflected in teachers' feedback, become increasingly available and comprehensible to both children and their parents. A number of studies have shown strong links between children's academic performance and their expectations for their future education (Chemers, Hu, & Garcia, 2001; Nicholson et al., 2013). Compared to students who had no post-school plans, those who intended to go to university were more likely to do so (Homel et al., 2014). Children's academic performance also influences their parents' expectations. Goldenberg, Gallimore, Reese, and Garnier (2001) found that although children's academic abilities and parents' expectations were unrelated in kindergarten, over the course of schooling, parents' expectations become increasingly linked to how well children are doing at school.

Moreover, parental expectations may change as children get older. For instance, Goldenberg et al. (2001) reported fluctuations in parental expectations from kindergarten to sixth grade. While parents' expectations may be largely influenced by their own experiences and values when their children are little, these expectations may change according to children's interests and motivations as they grow. Knowing how parents' expectations change over time is important, because these expectations are strongly related to parental involvement, resources provided to children and children's own expectations for their educational achievement.

The first goal of this chapter is to provide a rich contextual picture of both parents' and children's educational expectations. Using the information on parents' expectations collected when children were 8–13 years old, this chapter assesses whether, as their children get older, parents revise their expectations of their child's future educational attainment. We compare the distribution of both sets

of expectations for various family characteristics and socio-demographic factors. In particular, this chapter provides insight into the influence of children's academic achievements on the expectations of children and their parents.

This chapter addresses the following research questions:

- What are the educational expectations of both parents and children and how are they related?
- How do the educational expectations of both parents and children differ by child, family and school factors (parent education, parent occupational prestige, grandparent education, cultural background, school type and socio-educational advantage)?
- How do the educational expectations of children and those of their parents relate to children's academic performance?
- Do the relationships identified in previous research questions remain the same across children with similar levels of academic performance?
- Are children with higher expectations more motivated to learn than those children who have lower expectations?

6.2 Methodology

This section provides a brief description of the sample, data and measures used in the chapter.

Sample

This chapter uses LSAC K cohort data collected at Waves 3 and 5, when children were 8–9 and 12–13 years old respectively. Given that this chapter assesses the changes in mothers' expectations for their child's educational attainment as children grow, only those children who participated at both waves were included in the sample. The sample was also limited to those children whose parents agreed to link their Year 5 National Assessment Program—Literacy and Numeracy (NAPLAN) test results.

In addition, because the vast majority of Parent 1s were mothers (94.0%), results included in this chapter are presented for mothers only. Fathers (5.5%) and other adults who were identified as the primary carers (0.5%) were excluded from the analysis. The final sample included 3,422 children.

The majority of children were in high school (74%) at Wave 5. However, 5% were still in Year 5 or 6, and 21% were in Year 7 but were living in the three states where Year 7 is part of the primary years (Queensland, South Australia and Western Australia).

Measures of educational expectation

Mothers' expectations

At Wave 3 and Wave 5, mothers (Parent 1) were asked to report how far they believed their child would go with their education. The response categories were: (1) leave school before finishing secondary school; (2) complete secondary school; (3) complete a trade or vocational training course; (4) go to university and complete a degree; or (5) obtain a postgraduate qualification. The responses were categorised into a three-level categorical variable:

- Year 12 or below (categories 1 and 2);
- trade or vocational training (category 3);
- university degree or postgraduate qualification (categories 4 and 5).

Children's expectations

At Wave 5, children were asked to indicate their expectations of their own education: (1) leave before secondary school; (2) complete secondary school; (3) complete a trade or vocational training; or (4) obtain a university degree. As with maternal responses, children's responses were combined into three categories:

- Year 12 or below (categories 1 and 2);
- trade or vocational training (category 3);
- university degree (category 4).

Measures of child, family and school factors

As noted in the introduction, there are a range of factors that are expected to be associated with the educational expectations of children and their parents. These include child and family characteristics such as the child's gender, either parent's highest level of education (Year 12 or below, vocational training or university degree) and occupational prestige (Group 1: managers or professionals; Group 2: clerical or skilled workers; Group 3: unskilled workers; Group 4: neither parent is in paid work),[1] household income (low: bottom 25% of income distribution; mid-level: middle 50%; high: top 25%), mother's country of birth (Australia/New Zealand vs others), and the highest level of grandparents' education (Year 12 or below, vocational training or university degree). School factors were also examined, including the type of school (government, Catholic or independent/private) and the school's Index of Community Socio-Educational Advantage (ICSEA). ICSEA is an index of the socio-economic background of the students at the school, with more advantaged schools having a higher ICSEA and schools with students from more disadvantaged backgrounds having a lower ICSEA (Australian Curriculum, Assessment and Reporting Authority [ACARA], 2013). The ICSEA scores were categories into high-level (top 25%), mid-level (middle 50%) and low-level (bottom 25%).

Measures of children's intrinsic motivation and achievement motivation

Intrinsic motivation

Children's intrinsic motivation was measured using the Motivation subscale from the Quality of School Life Questionnaire (Williams & Batten, 1981). This subscale was developed to measure "a sense of self-motivation in learning and that learning is enjoyable for its own sake" (Ainley & Bourke, 1992). The subscale comprises six items with response options ranging from 1 (strongly disagree) to 4 (strongly agree) to the following statements:

- "The work we do is interesting."
- "I like to ask questions in class."
- "I like to do extra work."
- "I enjoy what I do in class."
- "I always try to do my best."
- "I get excited about the work we do."

The score on the intrinsic motivation scale is the mean of the underlying items, with a higher score indicating a greater level of motivation.

In this analysis, children were divided into three groups according to their score on the intrinsic motivation scale: (a) low motivation: bottom 25% of the distribution of mean scores; (b) mid-level motivation: middle 50% of the distribution; and (c) high motivation: top 25% of the distribution.

Achievement motivation

Children's achievement motivation was measured using the Achievement Goal Questionnaire (AGQ) (Elliot & McGregor, 2001). This questionnaire comprises four subscales:

- performance-approach goal;
- performance-avoidance goal;
- mastery-approach goal; and
- mastery-avoidance goal.

[1] Since 2006, the Australian and New Zealand governments have collaborated to develop a combined Australian and New Zealand Standard Classification of Occupations (ANZSCO). The ANZSCO has classified occupations into eight major groups: (1) managers; (2) professionals; (3) technicians and trades workers; (4) community and personal service workers; (5) clerical and administrative workers; (6) sales; (7) machinery operators and drivers; and (8) labourers. In this analysis, parents' occupational prestige was collapsed to: managers/professionals; clerical and skilled workers; and unskilled labourers. The same measure has been used in other published papers using LSAC data (Giallo et al., 2013). In addition, neither parent being in paid work (unemployed or not in labour force—6% in the current sample) was included as a fourth group.

Each subscale consists of three items, with response options ranging from 1 (not at all true of me) to 7 (very true of me). For example: "My goal this year is to get better grades than most of the other students" (performance-approach goal); "I just want to avoid doing poorly compared to other students this year" (performance-avoidance goal); "Completely mastering the material in my courses is important to me this year" (mastery-approach goal); "I worry that I may not learn all that I possibly could this year" (mastery-avoidance goal). The score on each subscale is the mean of the underlying items, with a higher score indicating a greater level of corresponding achievement motivation.

In this analysis, children were also divided into three categories according to their score on achievement goal subscales: (a) low achievement motivation: bottom 25% of the distribution of the mean score; (b) mid-level achievement motivation: middle 50% of the distribution; and (c) high achievement motivation: top 25% of the distribution. Studies have shown a general pattern that both performance-approach and mastery-approach goals reflect positive attitudes towards learning (Moller & Elliot, 2006), whereas performance-avoidance and mastery-avoidance goals were negative predictors of academic performance (Cury, Elliot, Da Fonseca, & Moller, 2006).

Measures of academic achievement

Children's academic achievement was measured using NAPLAN scores. NAPLAN is an annual test administered to all Australian students in Years 3, 5, 7 and 9 in the domains of reading, writing, language conventions (spelling, grammar and punctuation) and numeracy. The NAPLAN score is calculated separately for each domain and ranges from 0 to 1,000. In addition, the scale for each domain is divided into ten bands to cover the full extent of student achievement from Year 3 through to Year 9. One band at each year level represents the national minimum standards (NMS) for a wide range of skills that are to be achieved by students sitting the test. Students may obtain results that place them in a band that is lower or higher than the NMS band. For more details on the NAPLAN data contained in LSAC, please refer to Daraganova, Edwards, and Sipthorp (2013).

In this chapter, we use Year 5 NAPLAN results on numeracy and reading tests, as not all children had had an opportunity to sit Year 7 NAPLAN tests by the time of the Wave 5 data collection. The Year 5 report relates to Bands 3 to 8, where Band 3 is considered to be below the NMS, a score in Band 4 is at the NMS, and scores in Bands 5–8 are above the NMS.

To compare children's relative performance, numeracy and reading scores were divided into three categories:

- *low performance*—scores in the bottom 25% of the NAPLAN numeracy/reading score distribution;
- *mid-level performance*—scores in the middle 50% of the distribution; and
- *high performance*—scores in the top 25% of the distribution.

Table 6.1 reports the means and standard deviations of the reading and numeracy scores associated with the categorised percentiles within the current sample.

Table 6.1: NAPLAN reading and numeracy scores associated with categorised percentiles

	Reading			Numeracy		
	Mean score (*SD*)	*n*	Band (%)	Mean score (*SD*)	*n*	Band (%)
Low performance (bottom 25%)	409.1 (41.63)	830	Band 3 or below (19%) Band 4 (38%) Band 5 (43%)	416.9 (34.50)	756	Band 3 or below (10%) Band 4 (40%) Band 5 (50%)
Mid-level performance (middle 50%)	510.3 (29.09)	1,560	Band 5 (21%) Band 6 (49%) Band 7 (30%)	499.5 (27.21)	1,676	Band 5 (31%) Band 6 (51%) Band 7 (18%)
High performance (top 25%)	609.3 (40.55)	854	Band 7 (22%) Band 8 or above (78%)	598.6 (43.88)	812	Band 7 (47%) Band 8 or above (53%)
Totals	511.0 (80.39)	3,244		505.1 (71.86)	3,244	

Note: Percentages may not total exactly 100.0% due to rounding.
Source: LSAC Year 5 NAPLAN data, K cohort

6.3 Mothers' and children's educational expectations

This section examines the educational expectations of mothers and their children and how these expectations relate to each other.

Mothers' educational expectations

Table 6.2 describes mothers' educational expectations for their children's future educational achievement when their child was aged 8–9 against expectations for their child at 12–13 years. As the "Total" column indicates, when children were 8–9 years old, 16% of mothers expected their children to do no more than finishing Year 12, 18% of mothers thought that their children would complete vocational training and a vast majority expected their children to go to university (66%). A similar pattern was observed when children were 12–13 years old. Specifically, 19% of mothers expected their children to go no further than Year 12, 17% of mothers expected their children to complete vocational training and 64% of mothers expected their children to go to university.

Table 6.2: The educational expectations of mothers for their child's educational achievements, at Waves 3 and 5

Mothers' expectations for children aged 8–9 years	Mothers' expectations for children aged 12–13 years			
	Year 12 or below (%)	Vocational training (%)	University degree (%)	Total (%)
Year 12 or below	8.0 [a]	3.6	3.9	15.5
Vocational training	4.6	8.5 [a]	5.1	18.1
University degree	6.6	4.7	55.0 [a]	66.4
Totals	19.2	16.9	63.9	100.0

Notes: n = 2,996. [a] The percentages in these cells indicate the proportion of parents who did not change educational expectations for their child from Wave 3 to Wave 5. Regression analysis revealed a statistically significant ($p < .05$) association between mothers' expectations for their child's education at Waves 3 and 5. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 responses, K cohort, Waves 3 & 5

Results suggest that mothers' expectations in Year 7 (when children were 12–13 years) were significantly associated with their expectations for Year 3 children (aged 8–9 years). As children got older, 72% (sum of the highlighted percentages along the diagonal in Table 6.2) of mothers did not change their expectations, whereas 13% had higher expectations for their children than before and 16% had lowered their expectations. The greatest variation in expectations was observed among mothers who expected their children to go no further than Year 12 or complete vocational training. In particular, out of the 16% of mothers who expected their children to go no further than Year 12 when children were 8–9 years old, only half of these mothers (8%) continued to have low expectations, whereas the remaining half (8%) had an increased expectation that their child would complete vocational training (4%) or obtain a university degree (4%).

Among those mothers who expected their child to complete vocational training when their child was 8–9 years old (18%), half of them maintained that expectation (9% of the total sample), whereas the other half either increased (5% of the total sample) or decreased (5% of the total sample) their expectations, as their child got older.

By the age of 12–13, out of the 66% of mothers who had previously expected their children to complete a university degree, 83% (55% of the total sample) continued to have high expectations, while 10% of them (7% of the total sample) expected their child to go no further than Year 12, and 8% (5% of the total sample) expected their child to complete a trade or vocational training.

As Table 6.3 (on page 111) shows, children's educational expectations were significantly associated with their mothers' expectations. Most children reported the same expectation as their mothers (67%—the sum of the percentages along the diagonal). However, 18% of the children whose mothers expected them to complete vocational training (3% of the total sample) anticipated going to university.

Table 6.3: Educational expectations of mothers and their children at Wave 5 (12–13 years)

Children's expectations	Mothers' expectations for children			
	Year 12 or below (%)	Vocational training (%)	University degree (%)	Total (%)
Year 12 or below	12.1 [a]	6.5	8.6	27.3
Vocational training	3.5	7.1 [a]	7.3	17.8
University degree	3.8	3.0	48.0 [a]	54.9
Totals	19.4	16.6	64.0	100.0

Notes: n = 2,977. [a] The percentages in these cells indicate the proportion of children and parents who had the same educational expectations about the children's future educational attainment. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child responses, K cohort, Wave 5

On the other hand, the proportion of children reporting lower expectations than their mother was larger (22%) than the proportion of children reporting higher expectations than their mother (10%). Among the children whose mother expected them to complete vocational training (17%), 39% (7% of the total sample) anticipated going no further than Year 12. Additionally, 11% of the children who expected to complete vocational training (7% of the total sample) and 13% of the children who expected to go no further than Year 12 (9% of the total sample), had mothers who expected them to obtain a university degree (64%).

Overall, children's expectations were closely associated with the expectations of their mother, although a large proportion of children appeared to have lower expectations for their future education than their mothers.

6.4 Educational expectations by family and school factors

This section focuses on the second research question: "Do the educational expectations of children and their mothers vary according to family and school characteristics?" First, we examined differences in both mothers' and their children's expectations associated with each of the socio-economic and demographic factors, including child gender, maternal country of birth, parental education, occupational prestige, household income, grandparents' education, school type and school Index of Community Socio-Educational Advantage. We report these differences in the tables below.

We then performed multivariate analysis to test the associations between mothers' and their children's expectations with each factor, while adjusting for all other socio-economic and demographic factors.[2]

Additionally, as mothers' expectations were shown in the previous section to be significantly associated with children's expectations, we were interested to test whether children's expectations were related to family and school factors, independent of mothers' expectations. Therefore, mothers' expectations were also taken into account when assessing the associations between children's expectations and each of the socio-economic and demographic factors.

Child gender

As Table 6.4 (on page 112) illustrates, although most mothers were likely to expect their child to obtain a university or postgraduate qualification, the proportion of mothers who expected their child to have a university or higher degree was higher for girls (72%) than boys (56%). The proportion of mothers who only expected their child to obtain a Year 12 or lower qualification was similar between boys (20%) and girls (19%). However, mothers were less likely to expect daughters to complete a trade or vocational training course than sons (9% vs 24%). These differences were significant after controlling for a range of family and school factors.

[2] Multinomial logistic regression was used to predict the probabilities of possible outcomes of mothers' and children's educational expectations, while taking into account the effects of family and school characteristics on the expectations of mothers and their children.

In terms of children's expectations, girls seemed to hold higher expectations of their educational attainment than boys. Girls were more inclined to expect to go to university (59%) than to obtain vocational training (15%) compared to boys (49% vs 21%). However, these differences were not significant, when mothers' expectations and other characteristics were taken into account.

Table 6.4: Educational expectations of children and their mothers, by study child gender

	Boys (%)	Girls (%)
Mothers' expectations		
Year 12 or below	20.0	19.1
Vocational training	23.6	9.3
University degree	56.4	71.6
Total (%)	100.0	100.0
Total (*n*)	1,576	1,561
Children's expectations		
Year 12 or below	29.7	25.5
Vocational training	20.8	15.3
University degree	49.4	59.3
Total (%)	100.0	100.0
Total (*n*)	1,590	1,566

Notes: Parents' expectations: χ^2 (2, n = 3,055) = 51.58, $p < .001$. Children's expectations: χ^2 (2, n = 3078) = 12.60, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

Maternal country of birth

Compared with Australian- or New Zealand-born mothers, mothers who were born overseas tended to have higher expectations for their child's educational achievements (Table 6.5). The majority of mothers born overseas (82%) expected their child to obtain a tertiary degree. The percentage of Australian- or New Zealand-born mothers with such expectations was much smaller (59%). Also, mothers born in Australia or New Zealand were more likely to expect their child to do no more than finishing Year 12 (23%) or vocational training (19%), compared to mothers who were born overseas (8% and 9% respectively).

Table 6.5: Educational expectations of children and their mothers, by maternal country of birth

	Mother born in Australia/NZ (%)	Mother born overseas (%)
Mothers' expectations		
Year 12 or below	22.5	8.3
Vocational training	18.7	9.4
University degree	58.8	82.3
Total (%)	100.0	100.0
Total (*n*)	2,549	588
Children's expectations		
Year 12 or below	30.4	17.3
Vocational training	19.3	13.6
University degree	50.3	69.1
Total (%)	100.0	100.0
Total (*n*)	2,555	601

Notes: Parents' expectations: χ^2 (4, n = 3,055) = 43.71, $p < .001$. Children's expectations: χ^2 (2, n = 3,078) = 30.50, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

Consistent with their mothers' educational expectations, children of mothers born overseas also indicated higher expectations for their educational attainment. Among children whose mothers

were born in Australia or New Zealand, about half (50%) expected to achieve a university degree, compared with 69% among children whose mothers were born overseas. Even after adjusting for other characteristics, both mothers and their children were significantly more likely to hold high expectations if the mother was born overseas.

Parental education

Table 6.6 shows a positive relationship between mothers' expectations of their child's educational attainment and parental education (the highest level of education between parents). Four-fifths of mothers (80%) from families in which at least one parent held a tertiary degree expected their child to also obtain a tertiary degree. Mothers in the lowest educational category were more likely to expect their child to do no more than finish Year 12 (28%) than mothers in the highest educational categories (9%). The relationship between mothers' expectations and their educational level was significant in the adjusted model.

Table 6.6: Educational expectations of children and their mothers, by highest level of parental education (both parents)

	Highest level of parental education		
	Year 12 or below (%)	Vocational training (%)	University degree (%)
Mothers' expectations			
Year 12 or below	28.4	26.0	9.3
Vocational training	20.6	21.0	10.8
University degree	51.0	53.0	80.0
Total (%)	100.0	100.0	100.0
Total (*n*)	415	1,282	1,439
Children's expectations			
Year 12 or below	36.6	36.7	14.4
Vocational training	21.9	21.0	13.5
University degree	41.5	42.3	72.1
Total (%)	100.0	100.0	100.0
Total (*n*)	420	1,294	1,441

Notes: Parents' expectations: χ^2 (4, n = 3,055) = 51.49, $p < .001$. Children's expectations: χ^2 (4, n = 3,078) = 60.72, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

The educational expectations of children were also related to their parents' educational attainments, even after adjusting for mothers' expectations, family characteristics and school factors. Children whose mother had obtained a university degree were more likely to expect to obtain a university degree (72%) and less likely to expect to go no further than Year 12 (14%), as compared to children whose mother was in the lowest educational category (42% and 37% respectively).

Occupational prestige

Table 6.7 (on page 114) presents a positive association between parental occupation (highest occupational prestige between the two parents) and expectations for a child's educational attainment. The level of mothers' expectations was highest among families where at least one of the parents was employed in a high-prestige occupation (Group 1). Children with parents in the lowest occupational category (Group 3) were more likely to have mothers who expected their child to go no further than Year 12 (31%), compared to mothers in higher occupational categories (Group 1, 13%; Group 2, 22%).

A similar pattern was shown for children's expectations. Children in families where parents were employed in low-prestige occupations (Group 3), and children without a parent in paid work (Group 4) indicated low educational expectations, compared with those with at least one parent employed in a high-prestige occupation. However, once other characteristics were taken into account, the differences between mothers' and their children's expectations were no longer statistically significant.

Table 6.7: Educational expectations of children and their mothers, by parental occupational prestige

	Group 1 (high prestige occupation) (%) [a]	Group 2 (mid-level prestige occupation) (%) [a]	Group 3 (low prestige occupation) (%) [a]	Group 4 (not in paid work) (%) [a]
Mothers' expectations				
Year 12 or below	13.2	21.7	31.3	37.6
Vocational training	13.4	21.0	19.2	15.7
University degree	73.4	57.3	49.5	46.7
Total (%)	100.0	100.0	100.0	100.0
Total (*n*)	1,681	1,002	292	162
Children's expectations				
Year 12 or below	19.3	32.3	40.4	44.7
Vocational training	16.0	21.6	17.3	16.9
University degree	64.8	46.0	42.3	38.5
Total (%)	100.0	100.0	100.0	100.0
Total (*n*)	1,680	1,011	292	172

Notes: [a] Group 1: managers/professionals (e.g., specialist manager); Group 2: clerical or skilled workers (e.g., salespersons); Group 3: unskilled workers (e.g., cleaners and laundry workers); Group 4: neither parent is in paid work. Parents' expectations: χ^2 (6, n = 3,055) = 21.64, $p < .001$. Children's expectations: χ^2 (6, n = 3,077) = 20.67, $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child responses, K cohort, Wave 5

Household income

Although most mothers expected their child to obtain a tertiary degree, this proportion was higher among families with higher levels of household income. As Table 6.8 shows, three-quarters (75%) of parents in the highest income group expected their child to earn a university degree or higher, compared to half (53%) of parents in the low-income group.

Children from high-income families also indicated higher levels of educational expectations (70%) than did children from low-income families (45%). The percentage of children expecting to complete no more than Year 12 was highest among low-income families (37%), followed by mid-level-income families (27%), and high-income families (19%). However, when all other characteristics were adjusted for, these differences were not statistically significant.

Table 6.8: Educational expectations of children and their mothers, by household income

	Lowest 25% household income (%)	Middle 50% household income (%)	Highest 25% household income (%)
Mothers' expectations			
Year 12 or below	27.9	18.3	12.6
Vocational training	19.6	18.5	12.1
University degree	52.5	63.2	75.4
Total (%)	100.0	100.0	100.0
Total (*n*)	611	1,366	706
Children's expectations			
Year 12 or below	36.5	26.9	17.9
Vocational training	18.8	19.9	12.0
University degree	44.7	53.2	70.2
Total (%)	100.0	100.0	100.0
Total (*n*)	620	1,382	707

Notes: Parents' expectations: χ^2 (4, n = 2,615) = 15.60, $p < .001$. Children's expectations: χ^2 (4, n = 2,643) = 19.42, $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child responses, K cohort, Wave 5

Grandparents' education

Table 6.9 shows that there is a clear link between grandparents' educational attainment and mothers' expectations for their child's future education. Among mothers whose parents obtained a university degree, a vast majority (85%) also expected their child to obtain a university qualification. This proportion was 59% among mothers whose parents completed no more than Year 12 education. Mothers whose parents completed no more than Year 12 education were also more likely to expect their child would not progress beyond Year 12 (24%) compared to mothers whose parents completed a university degree (8%). Mothers' expectations by the educational level of parental grandparents showed a similar pattern. These differences were significant after adjusting for other family and school characteristics.

Similar to mothers' expectations, children's expectations were also associated with their grandparents' educational attainments. However, once mothers' expectations and other characteristics were taken into account, the association between grandparents' education and children's expectations was no longer significant.

Table 6.9: Educational expectations of children and their mothers, by grandparents' education

	Maternal grandparents' education [a]			Parental grandparents' education [b]		
	Year 12 or below (%)	Vocational training (%)	University degree (%)	Year 12 or below (%)	Vocational training (%)	University degree (%)
Mothers' expectations						
Year 12 or below	23.6	16.5	7.6	18.7	15.4	7.4
Vocational training	17.6	19.6	7.3	15.8	15.9	9.6
University degree	58.8	63.9	85.1	65.5	68.7	83.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total (*n*)	1,566	964	519	904	579	314
Children's expectations						
Year 12 or below	31.2	26.2	15.1	25.3	20.7	12.4
Vocational training	19.0	18.5	13.6	17.7	19.3	13.5
University degree	49.8	55.3	71.4	57.0	60.0	74.0
Total (%)	100.0	100.0	100.0	100.0	100.0	100.0
Total (*n*)	1,567	974	523	923	586	314

Notes: Parents' expectations: [a] χ^2 (4, n = 2974) = 28.65, $p < .001$. [b] χ^2 (4, n = 1767) = 6.52 $p < .001$. Children's expectations: [a] χ^2 (4, n = 2993) = 15.69, $p < .001$. [b] χ^2 (4, n =1793) = 6.22, $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child responses, K cohort, Wave 5

School type

As indicated by Table 6.10 (on page 116), statistically significant disparities in mothers' educational expectations were noted among children who were enrolled in different types of schools. One-quarter (25%) of mothers whose children were attending government schools expected their child to do no more than finish Year 12. This proportion was lower among mothers whose children were attending Catholic (16%) or independent/private schools (11%). Regardless of school type, the majority of mothers expected their children to obtain a university degree. However, the percentage of mothers who expected their child to earn a bachelor's degree or higher was substantially higher among children in independent/private schools (78%) and Catholic schools (68%), compared to children in government schools (56%). The association between school type and mothers' expectations was significant even after other characteristics were taken into account.

About one-third (33%) of children in government schools reported expecting no more than finishing Year 12, compared to only 18% in independent/private schools. The differences between children from government and independent/private schools were not significant after adjusting for other factors. This suggests that there is no direct association between children's expectations and school type.

Table 6.10: Educational expectations of children and their mothers, by the type of school

	Government school (%)	Catholic school (%)	Independent/private school (%)
Mothers' expectations			
Year 12 or below	25.0	15.6	10.9
Vocational training	19.4	16.0	11.3
University degree	55.6	68.4	77.8
Total (%)	100.0	100.0	100.0
Total (*n*)	1,607	776	754
Children's expectations			
Year 12 or below	32.6	25.9	17.6
Vocational training	21.4	14.8	14.1
University degree	46.1	59.3	68.3
Total (%)	100.0	100.0	100.0
Total (*n*)	1,601	789	752

Notes: Parents' expectations: χ^2 (4, n = 3055) = 24.71, $p < .001$. Children's expectations: χ^2 (4, n = 3064) = 24.06, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

School Index of Community Socio-Educational Advantage

Among mothers of children who attended a socio-educationally disadvantaged school, about one-third (31%) expected their child to go no further than high school, compared to 19% of mothers of children in schools with middle 50% ICSEA scores and 6% of mothers of children in schools with top 25% ICSEA scores (Table 6.11).

Table 6.11: Educational expectations of children and their mothers, by the school Index of Community Socio-Educational Advantage

	Lowest 25% ICSEA (%)	Middle 50% ICSEA (%)	Highest 25% ICSEA (%)
Mothers' expectations			
Year 12 or below	30.9	18.8	6.1
Vocational training	22.1	19.0	6.6
University degree	47.0	62.1	87.3
Total (%)	100.0	100.0	100.0
Total (*n*)	783	1,452	772
Children's expectations			
Year 12 or below	39.7	27.8	12.3
Vocational training	19.9	19.8	12.6
University degree	40.4	52.4	75.1
Total (%)	100.0	100.0	100.0
Total (*n*)	771	1,482	774

Notes: Parents' expectations: χ^2 (4, n = 2928) = 53.52, $p < .001$. Children's expectations: χ^2 (4, n = 2951) = 40.13, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

In addition, children from schools with students from higher socio-economic backgrounds were more inclined to expect a university degree than children from schools with students from lower socio-economic backgrounds. About 12% of children attending schools with high socio-economic status expected to go no further than Year 12. This proportion was about twice as large among children attending schools with middle 50% of ICSEA scores (28%) and three times larger among children attending schools with bottom 25% ICSEA scores (40%). For both children and their mothers, educational expectations were related to the levels of socio-educational advantage of the school that the child was attending, even after adjusting for other factors. This suggests that the

socio-economic characteristics of schools are associated with mothers' and children's expectations, over and above other family characteristics and school sector.

Family and school factors associated with educational expectations

Overall, the child's gender, mother's country of birth, parental education, grandparents' education, school type and the index of school socio-educational advantage were significant factors associated with mothers' and children's educational expectations.

The majority of the differences observed in mothers' expectations for their child's education were between obtaining a university qualification and completing vocational training/Year 12 or below. Mothers were more likely to expect their child to obtain a university degree if:

- their child was a girl;
- the mother was born overseas;
- at least one of the parents had a tertiary degree;
- at least one of the child's grandparents had a tertiary degree;
- the child was enrolled in an independent/private school; and/or
- the child was enrolled in a socio-educationally advantaged school.

Children were more likely to expect to obtain a university qualification than to go no further than Year 12 if:

- their mother was born overseas;
- at least one of their parents had a tertiary degree;
- they were enrolled in a socio-educationally advantaged school.

In addition, children were more likely to expect to complete vocational training than to proceed no further than Year 12 if they were enrolled in a socio-educationally advantaged school.

6.5 Educational expectations and academic achievement

Having explored the variations in the educational expectations of both mothers and their children across gender, socio-economic status of the family and school, this section assesses the relationship between both sets of expectations when children were aged 12–13 and children's actual academic performance in Year 5, when children were aged 10–11, as measured by children's NAPLAN reading and numeracy scores.

The top panel of Table 6.12 (on page 118) illustrates the comparison of mothers' expectations across different levels of their children's academic performance. The average NAPLAN scores (in the adjusted mean score columns) were substantially higher among children whose mothers had high expectations. In addition, the vast majority of mothers whose children scored in the top 25% of the NAPLAN numeracy test expected their child to obtain a university qualification (88%). This proportion was substantially smaller among mothers whose children scored in the middle 50% (67%) or bottom 25% (34%) of the NAPLAN numeracy test. Among mothers whose children's numeracy scores were in the bottom 25%, more than one third (37%) expected their child to not proceed further than Year 12. Notably, this proportion was substantially smaller among mothers whose children achieved the top numeracy scores (6%). The comparison of mothers' expectations across different levels of reading performance of children indicated similar results.

The lower panel of the table presents the results for children's expectations. The average NAPLAN scores (in the adjusted mean score columns) were higher among children with high expectations for their future educational achievement. In addition, 10% of the children whose numeracy performance was in the top 25% expected to attain no higher than Year 12. This proportion was more than twice as large (26%) among those in the middle 50% and almost four times as large (48%) among children in the bottom 25%. Similarly, children who demonstrated high levels of reading performance were significantly more likely to expect to attain a university degree than children who did not.

When controlling for a range of family and social factors (e.g., parental education) that have been found to influence both sets of expectations in the previous section, similar patterns were observed.

Both children and their mothers tended to have higher expectations if the child performed very well in their NAPLAN tests.

Table 6.12: Educational expectations of children and their mothers at Wave 5 (child aged 12–13 years), by academic performance in Year 5 (child aged 10–11 years)

	NAPLAN numeracy performance (10–11 years)				NAPLAN reading performance (10–11 years)			
	Adjusted mean score [a]	Bottom 25% (%)	Middle 50% (%)	Top 25% (%)	Adjusted mean score [a]	Bottom 25% (%)	Middle 50% (%)	Top 25% (%)
Mothers' expectations (12–13 years) [b]								
Year 12	473.50	37.2	17.2	6.3	463.13	36.0	17.4	5.7
Vocational training	478.07	28.6	16.2	5.7	466.35	30.9	14.8	5.0
University degree	534.31	34.2	66.6	88.0	525.90	33.1	67.7	89.3
Total (%)		100.0	100.0	100.0		100.0	100.0	100.0
Total (*n*)	3,137	720	1,619	798	3,137	795	1,503	839
Children's expectations (12–13 years) [c]								
Year 12	478.18	47.6	26.1	10.2	472.19	47.5	25.8	9.5
Vocational training	496.77	22.9	18.8	11.6	482.81	24.7	17.4	12.2
University degree	529.22	29.5	55.1	78.3	521.62	27.8	57.8	78.3
Total (%)		100.0	100.0	100.0		100.0	100.0	100.0
Total (*n*)	3,156	732	1,638	796	3,156	797	1,516	843

Notes: [a] Means were adjusted for parental education, occupation, family income, gender, country of birth, type of school and education of grandparents.
[b] Mothers' expectations across NAPLAN numeracy: χ^2 (4, n = 3055) = 104.24, $p < .001$; Mothers' expectations across NAPLAN reading: χ^2 (4, n = 3055) = 123.39, $p < .001$.
[c] Children's expectations across NAPLAN numeracy: χ^2 (4, n = 3078) = 87.91, $p < .001$; Children's expectations across NAPLAN reading: χ^2 (4, n = 3078) = 93.96, $p < .001$. Percentages may not total exactly 100.0% due to rounding.
Source: Parent 1 and study child responses, K cohort, Wave 5

6.6 Educational expectations among children of similar levels of academic performance

As noted in section 6.4, the educational expectations of children and their mothers vary according to a number of family and school factors. Analysis from section 6.5 also indicates that both sets of expectations are significantly related to children's academic performance. This raises the question of whether the relationships between demographic characteristics and the expectations observed in section 6.4 merely reflect parents' and children's assessment of their academic performance and not any underlying demographic differences in educational expectations. Put another way, we want to hold academic performance constant and then test for any demographic differences in expectations. This section thus answers the next research question: "Do the expectations of children and their mothers differ according to these family and school factors among children with similar levels of academic performance?"

To answer this question, we examined the associations between family and school factors and both sets of expectations across three academic levels:

- *low level*—bottom 25% of the NAPLAN performance;
- *mid-level*—middle 50% of the NAPLAN performance; and
- *high level*—top 25% of the NAPLAN performance.

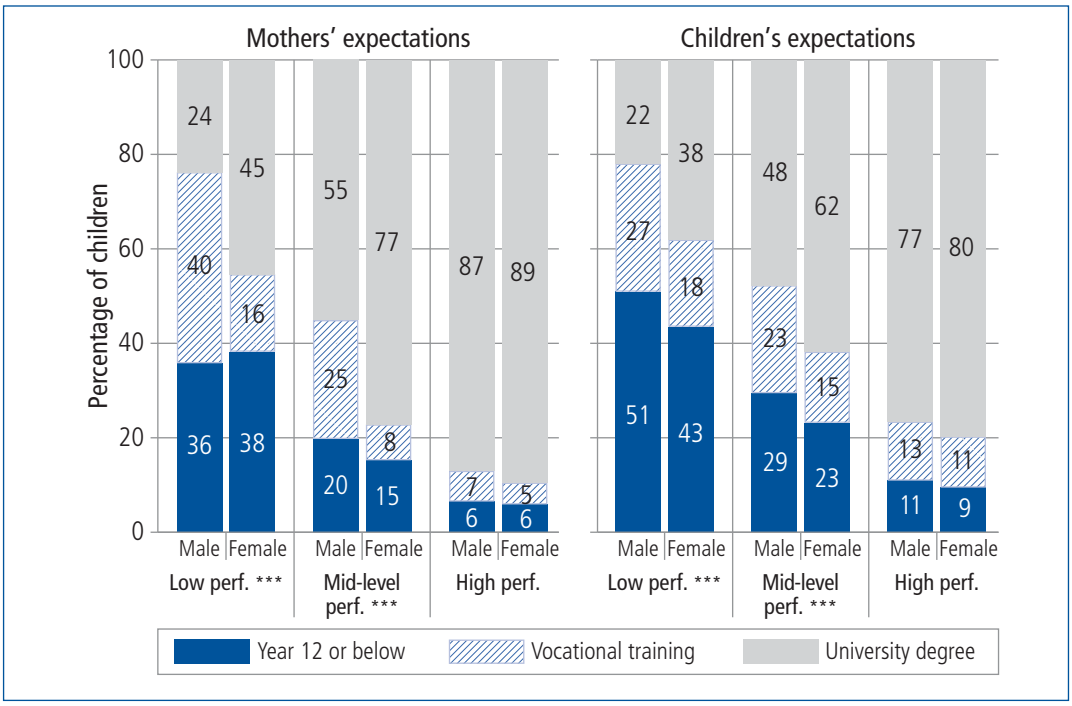
We also examined the family and school factors that were shown in section 6.4 to be significantly related to mothers' and their children's expectations after controlling for other factors (child gender, maternal country of birth, parental education, grandparents' education, type of school and school Index of Community Socio-Educational Advantage). We included all five factors in a statistical model that adjusted for all factors simultaneously in one multivariate regression model. Significant results of the multivariate analysis are highlighted using * in the figures below (* $p < .05$, ** $p < .01$, *** $p < .001$).

The figures present children's performance in the NAPLAN numeracy test. The analyses of children's reading performance had essentially the same findings, and therefore, are not presented.

Child gender

As discussed in section 6.5, mothers' educational expectations are closely related to children's academic achievement. As Figure 6.1 shows, in the middle 50% and bottom 25% of achievement groups, there was a gender difference that favoured girls, even after taking other family and social factors into account. Among children in the middle 50% and bottom 25% performance groups, mothers more often expected their daughters to go to university rather than to complete vocational training or go no further than Year 12, relative to their sons.

In addition, significant differences were apparent when comparing mothers' expectations for boys and girls among children with mid-level performance. Again, mothers more often considered vocational training as a choice for their sons' future education than for their daughters'. Statistically significant differences were not apparent when comparing mothers' expectations across child gender among those children who achieved high performance. Similar patterns were observed in children's educational expectations.



Notes: Adjusted analyses control for maternal country of birth, parental education, paternal grandparents' education, type of school and school socio-educational advantage. * $p < .05$, ** $p < .01$, *** $p < .001$. Percentages may not total exactly 100.0% due to rounding.

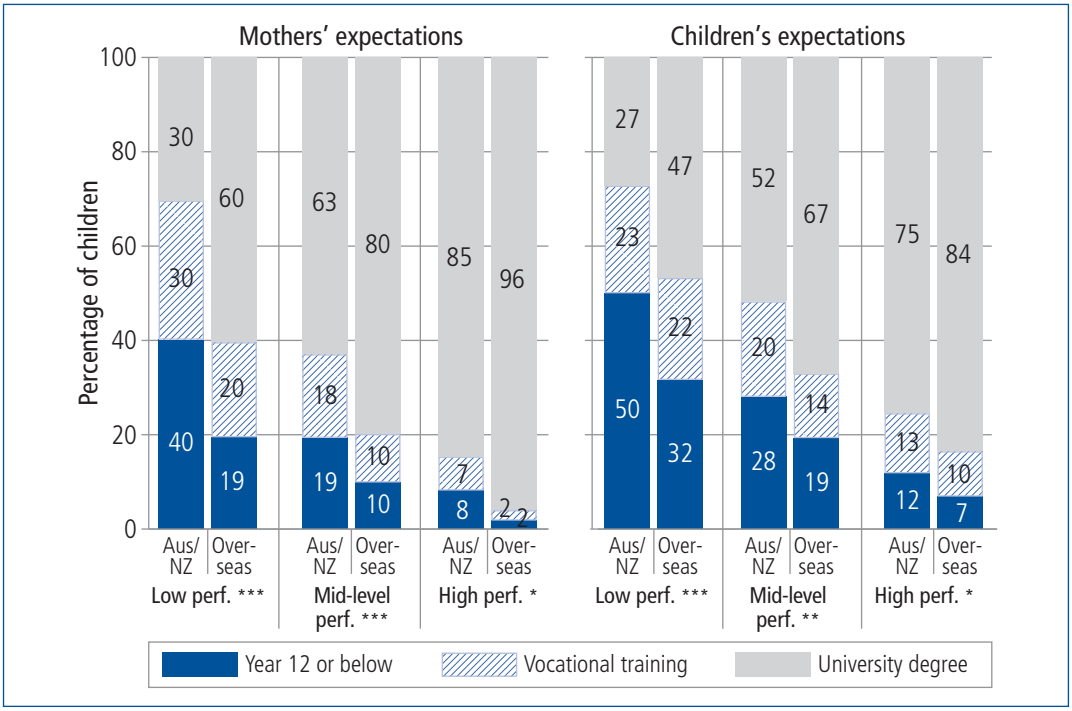
Source: Parent 1 and study child response, K cohort, Wave 5

Figure 6.1: Educational expectations of mothers and their children, by child gender and academic performance

Maternal country of birth

As it can be seen in Figure 6.2 (on page 120), mothers who were born overseas reported higher levels of educational expectations for their child than mothers who were born in Australia or New Zealand in all achievement groups, after adjusting for other family and social factors. Among children who had low academic performance, mothers who were born overseas were twice as likely to expect their children to go to university (60%) compared to mothers who were born in Australia/NZ (30%). Similarly, among children with mid-level academic performance, mothers who were born overseas were significantly more likely (80%) to have high expectations for their child's education than were mothers who were born in Australia/NZ (63%). This was true for children's expectations

as well. For both Australian/NZ-born and overseas-born mothers, the majority of them expected their child to obtain a university degree if their child demonstrated high academic performance (85% and 96% respectively). However, overseas-born mothers were less likely to expect their child to complete vocational training (2%) compared to Australian/NZ-born mothers (7%). Similar patterns were observed in the educational expectations of children.



Notes: Adjusted analyses control for child gender, parental education, paternal grandparents' education, type of school and school socio-educational advantage. * $p < .05$, ** $p < .01$, *** $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child response, K cohort, Wave 5

Figure 6.2: Educational expectations of mothers and their children, by maternal country of birth and children's academic performance

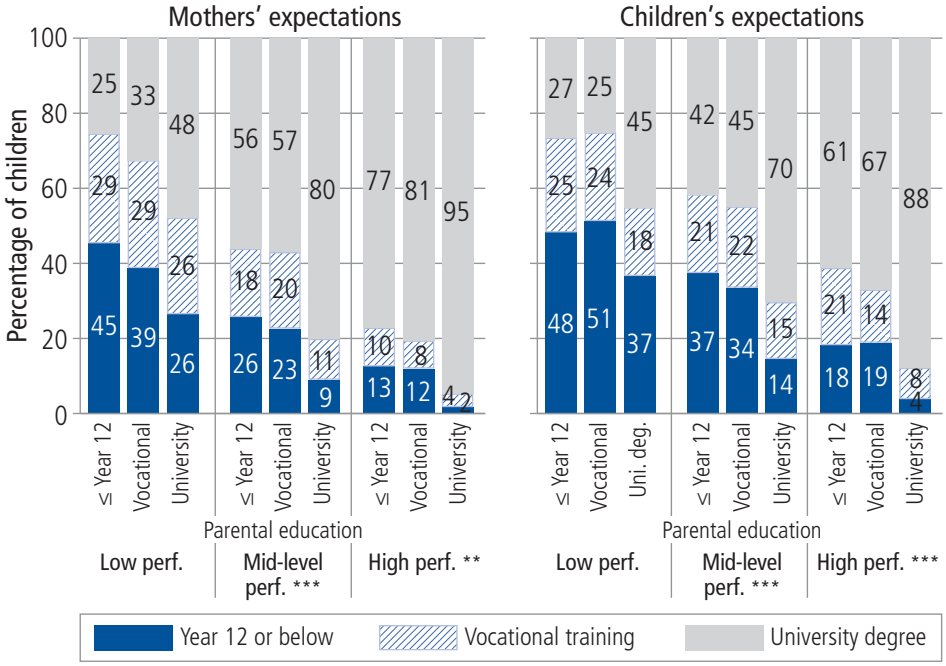
Parental education

As Figure 6.3 (on page 121) shows, among children with mid-level or high academic performance, mothers (and/or their partners) who held a university degree more often expected their child to also obtain a university degree compared to mothers (and/or their partners) who did not go further than Year 12. However, the differences in mothers' expectations were not significant among children with low academic performance.

Similarly, children of parents with low levels of education (Year 12 or below) reported lower expectations than children from a family in which at least one parent had a university degree. After adjusting for other family and social factors, the differences in children's expectations were no longer significant in the low performance group.

School type

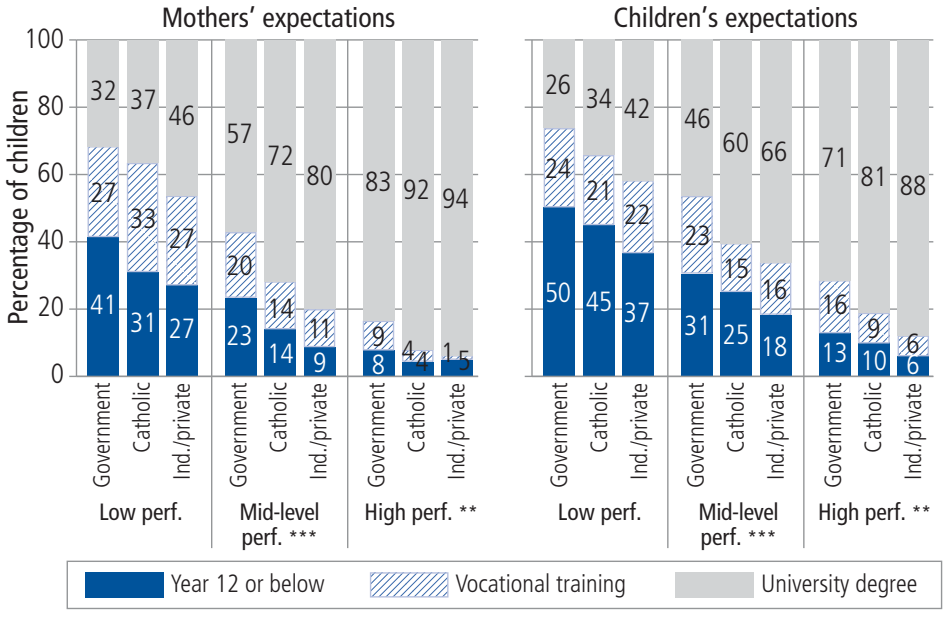
As evident in Figure 6.4 (on page 121), school type was related to both mothers' and children's expectations among children in the top 25% and middle 50% of NAPLAN performance. Among these children, mothers whose children attended government schools indicated significantly lower levels of expectations than those whose children attended Catholic and independent/private schools. However, the association between mothers' expectations and school type was not significant when we only focus on children with low performance. These same findings were observed in the analysis of the expectations of children.



Notes: Adjusted analyses control for child gender, maternal country of birth, paternal grandparents' education, type of school and school socio-educational advantage. * $p < .05$, ** $p < .01$, *** $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child response, K cohort, Wave 5

Figure 6.3: Educational expectations of mothers and their children, by parental education and children's academic performance



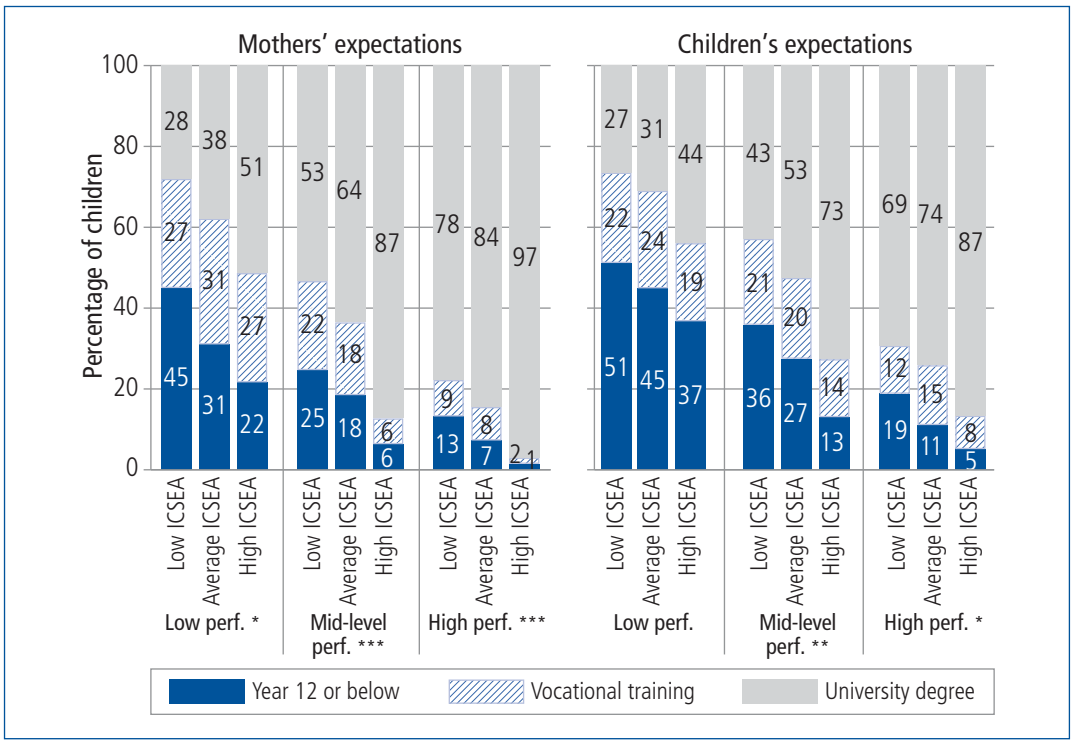
Notes: Adjusted analyses control for child gender, maternal country of birth, parental education, paternal grandparents' education and school socio-educational advantage. * $p < .05$, ** $p < .01$, *** $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child response, K cohort, Wave 5

Figure 6.4: Educational expectations of mothers and their children, by school type and children's academic performance

School Index of Community Socio-Educational Advantage

As discussed in section 6.4, mothers were more likely to hold high expectations for their children's educational achievement if their child was attending a school with students from high socio-economic backgrounds. As Figure 6.5 shows, this was true across all three academic performance groups. Children's expectations were also higher among those from higher socio-economic status schools, but the differences were only statistically significant among high and mid-level performing students.



Notes: Adjusted analyses control for child gender, maternal country of birth, parental education, paternal grandparents' education and type of school. * $p < .05$, ** $p < .01$, *** $p < .001$. Percentages may not total exactly 100.0% due to rounding.

Source: Parent 1 and study child response, K cohort, Wave 5

Figure 6.5: Educational expectations of mothers and their children, by school socio-educational advantage and children's academic performance

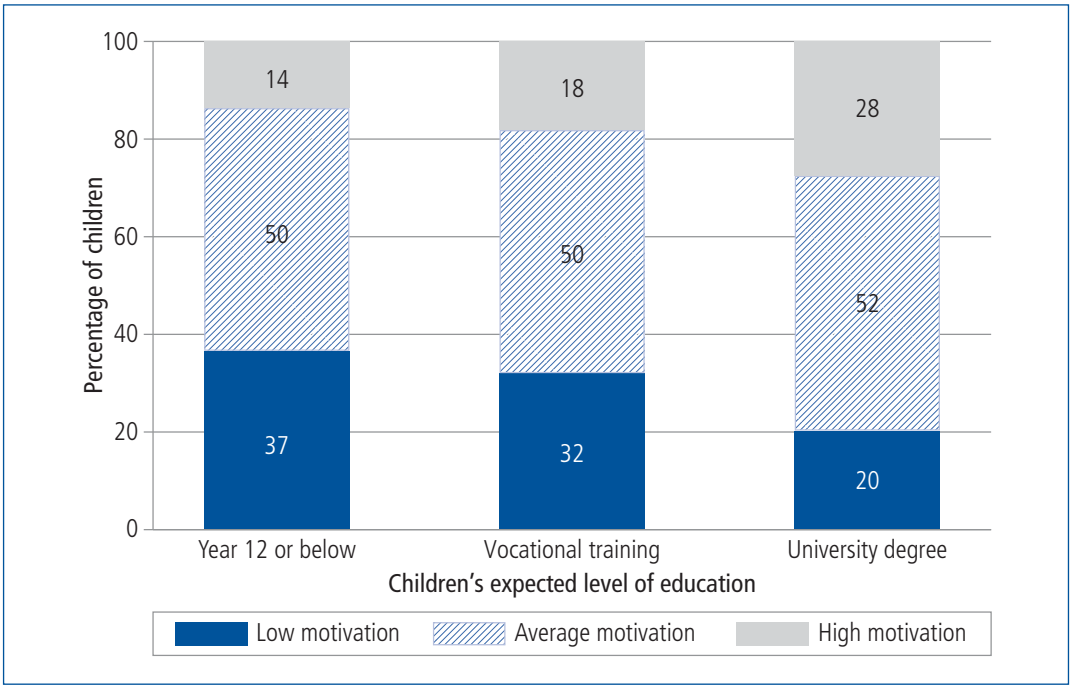
6.7 Children's educational expectations and their learning motivation

This section focuses on the last research question of this chapter: "Do children with higher expectations have higher levels of motivation than children who have lower expectations?" We performed multivariate analyses by including children's expectations, attitudes towards learning and a number of family and social factors in one regression model.

Intrinsic motivation

Figure 6.6 (on page 123) shows the extent to which children are motivated in learning (e.g., "I like to ask questions in class") and enjoy school (e.g., "I get excited about the work we do"), according to their educational expectations. Children who were expecting to obtain a university degree reported significantly higher levels of motivation to learn than children who were expecting to proceed no further than Year 12. For example, the proportion of children reporting low levels of intrinsic motivation was highest among children who expected to proceed no further than Year 12 (37%), followed by those who were expecting to complete vocational training (32%) and those who

were expecting to go to university (20%). Differences in intrinsic motivation were not statistically significant between those children who expected to obtain a vocational training qualification and those who had either higher (university) or lower (Year 12 or below) expectations for their future education.



Notes: Multinomial logit model revealed significant associations between children's expectations and intrinsic motivation ($p < .05$). Adjusted analyses control for mothers' expectations, child gender, maternal country of birth, parental education, grandparents' education and type of school. Percentages may not total exactly 100.0% due to rounding.
Source: Study child response, K cohort, Wave 5

Figure 6.6: Children's educational expectations and intrinsic motivation

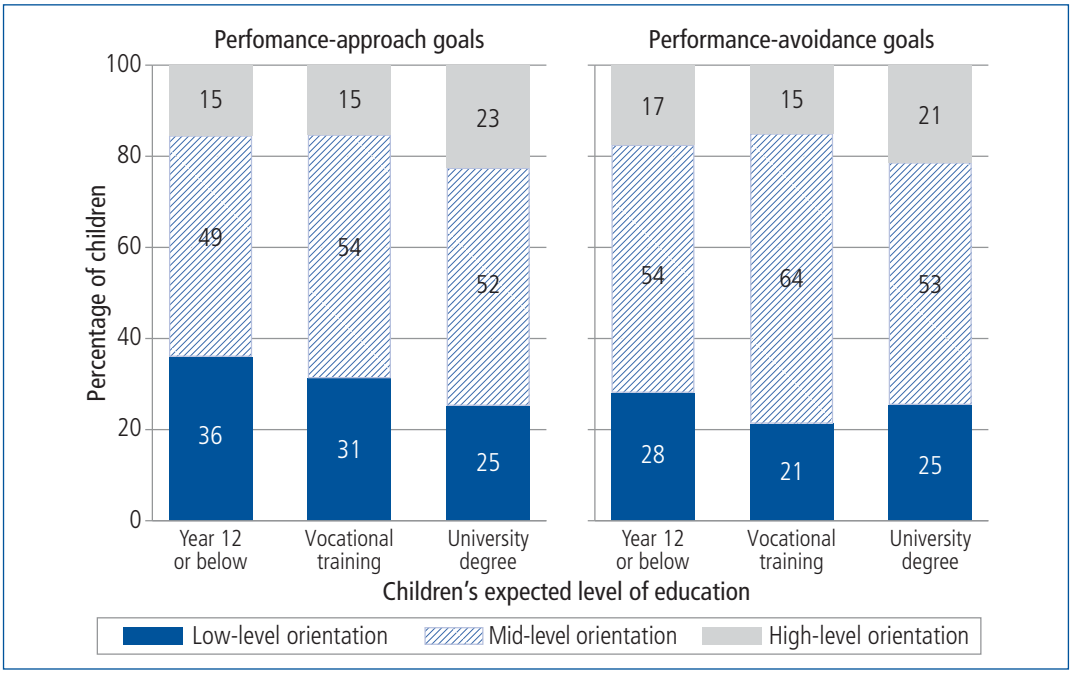
Achievement motivation

Performance-approach goals

Figure 6.7 (on page 124) shows that there is a significant relationship between children's educational expectations and their performance-approach goals (e.g., to get better grades than most of the other students). There was a strong relationship between children's expectations of going to university (cf. completing Year 12) and their desire to outperform other students. For example, among children who expected to do no more than Year 12, 36% of them were at the bottom quartile of performance-approach goals. This proportion was 25% among children who expected to earn a university degree. The differences between children's performance-approach goals were not significantly different between children who expected to obtain a vocational training qualification and those who expected to obtain lower (Year 12 or below) or higher (university) levels of education.

Performance-avoidance goals

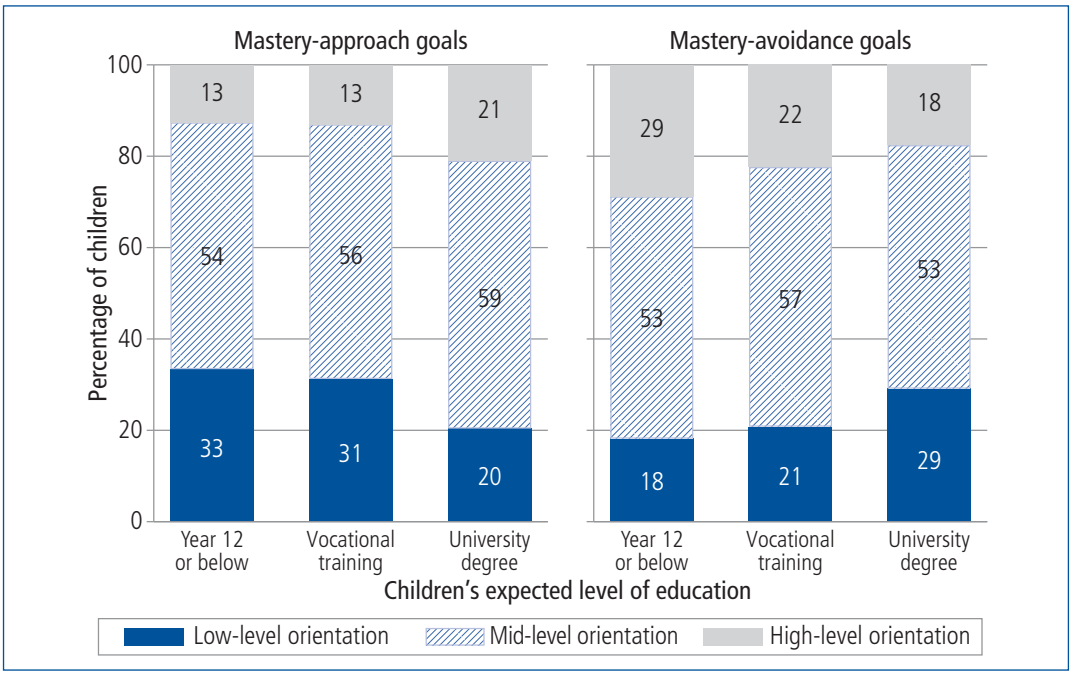
The association of children's expectations with performance-avoidance goals (e.g., to avoid doing poorly compared to other students) is presented in Figure 6.7 (on page 124). Results did not reveal substantial differences between children who expected to go to university and those who expected to do no more than Year 12. However, compared to children who expected to go no further than Year 12, those who expected to obtain vocational training were significantly more likely to report a mid-level orientation to performance-avoidance goals (64% vs 54%), and less likely to report a low-level orientation to performance-avoidance goals (21% vs 28%).



Notes: Multinomial logit model revealed significant associations between children's expectations and performance-approach goals ($p < .05$) and between children's expectations and performance-avoidance goals ($p < .05$). Adjusted analyses control for mothers' expectations, child gender, maternal country of birth, parental education, grandparents' education and type of school. Percentages may not total exactly 100.0% due to rounding.

Source: Study child response, K cohort, Wave 5

Figure 6.7: Children's educational expectations and achievement motivation (performance-approach and performance-avoidance goals)



Notes: Multinomial logit model revealed significant associations between children's expectations and mastery-approach goals ($p < .05$), and non-significant associations between children's expectations and mastery-avoidance goals ($p > .05$). Adjusted analyses control for mothers' expectations, child gender, maternal country of birth, parental education, grandparents' education and type of school. Percentages may not total exactly 100.0% due to rounding.

Source: Study child response, K cohort, Wave 5

Figure 6.8: Children's educational expectations and achievement motivation (mastery-approach and mastery-avoidance goals)

Mastery-approach goals

There was a significant positive association between children's expectations and their mastery-approach goals (e.g., completely mastering the materials in the course). As can be seen in Figure 6.8 (on page 124), children who expected to obtain a university degree were more motivated to understand the content and develop competence (21%) than children who expected to obtain trade or vocational training (13%) or proceed no further than Year 12 (13%). However, the proportions of children indicating mid-level mastery-approach goals were similar across different levels of educational expectations.

Mastery-avoidance goals

As Figure 6.8 indicates, children with high expectations (university) reported a low-level orientation to mastery-avoidance goals (29%) than children with lower expectations (vocational training, 21%; Year 12 or below, 18%). Among children who expected to proceed no further than Year 12, one-third of them (29%) had a high level orientation to mastery-avoidance goals. This proportion was lower among children who expected to complete vocational training (22%) or obtain a university degree (18%). However, multivariate analysis did not reveal a statistically significant association between children's expectations and their mastery-avoidance goals.

6.8 Summary and discussion

Educational expectations are important to study given that research has consistently found a strong link between such expectations and later educational and occupational attainment (Davis-Kean, 2005; Goldenberg et al., 2001; Gregory & Huang, 2013). The main purpose of this chapter was to provide an overview of the educational expectations of Australian children and their mothers, and to explore any associated family and school factors.

In general, mothers held high educational expectations for their children. More than half of the mothers expected their child to obtain a university degree. As expected, children's expectations for their own educational achievement were highly related to their mothers' expectations; those children whose mothers held high expectations for their education tended to also indicate high expectations for themselves. Having said that, the proportion of mothers who expected their children to obtain a university degree or higher degree was greater than the corresponding proportion of children's expectations. This is similar to a previous study by Gil-Flores, Padilla-Carmona, and Suárez-Ortega (2011), who found that parents tended to hold higher expectations than their children.

The chapter also examined changes in mothers' expectations for their child's educational achievement from Year 3 to Year 7. Previous studies documented that parents' educational expectations are influenced by how well children perform in school (Goldenberg et al., 2001; Zhang et al., 2011). In this chapter, the expectations that mothers held for their child in Year 3 tended to persist to Year 7, although some mothers tended to adjust their expectations as their child got older.

Both sets of educational expectations were found to be associated with characteristics of family and school. Mothers and their children were more likely to hold high educational expectations if the mother was born overseas. This finding confirmed those of other studies in Australia (Gemici et al., 2014).

Compared to mothers from socio-economically advantaged families, mothers held significantly lower expectations for their child's educational attainment if they came from families with lower income, where neither of the parents were in a paid job, or where neither themselves nor their parents (children's grandparents) had more than a high school education. This is consistent with previous studies that showed that individual and school-level socio-economic status accounted for the educational expectations of students and their parents (McCarron & Inkelas, 2006; Turley, Santos, & Ceja, 2007).

Gender was also an influential factor in both mothers' and children's educational expectations. Mothers were more likely to expect their daughters to go to university and less likely to expect their daughters to obtain vocational training compared with mothers of boys. This was true even after taking children's academic performance and socio-demographic factors into account. However, the gender difference in children's expectations was no longer significant after adjusting for mothers' expectations, family and school factors. Higher expectations for girls may be a result

of the increased rate of college enrolment and completion among women (Buchmann, DiPrete, & McDaniel, 2008). Recent research has found that mothers often perceive daughters to be more academically competent than sons (Wood, Kurtz-Costes, Rowley, & Okeke-Adeyanju, 2010). This may also be a result of reduced social inequality for women, as mothers see more opportunities for their daughters in the changing structure of the labour market and declining discrimination against women. They also see more opportunities for their daughters to have a high-paid occupation that requires a higher education qualification. The gender gap in mothers' and children's expectations may also be explained by the different learning styles of boys and girls, such as boys tending to prefer a hands-on learning approach (Dotterer, McHale, & Crouter, 2009). This may influence their academic interest and willingness to pursue further education. The fact that there are better-paid occupations that do not require a university qualification (e.g., plumbing, building construction, etc.) in male-dominated industries, compared to female-dominated industries (e.g., child care, hairdressing), may also be an explanation for the gender difference in mothers' expectations.

This chapter also presented evidence of school-level factors on educational expectations. The levels of mothers' expectations were significantly higher among those with children in independent/private schools than in government schools. School type appeared to be associated with mothers' expectations for their child's future educational attainment, over and above family characteristics. This finding is consistent with Corten and Dronkers' (2006) study using US data. Results also revealed substantial differences in mothers' expectations across schools with high and low levels of socio-educational advantage. If children were around students from socio-economically advantaged backgrounds, mothers were more likely to hold high expectations for their child's academic achievement. Previous research has shown that neighbourhood socio-economic position is related to academic achievement among third-grade students (Emory, Caughy, Harris, & Franzini, 2008). Parents with high expectations also tend to choose more advantaged schools for their child. Other factors, such as family income, may also explain the positive relationship between school socio-economic status and the expectations of children and their mothers, as parents with high income tend to choose and be able to afford higher quality schools for their child. Future studies are required to understand the mechanism of this relationship.

Compared to mothers' expectations, the expectations of children have not been widely studied. This chapter further increased our understanding of children's expectations in early adolescence. Similar to mothers' expectations, educational expectations of children were also socially patterned. Children from socio-economically advantaged families and socio-educationally advantaged schools were more likely to exhibit high expectations for their education in the future compared to others. Similar data in the US show that school-level socio-economic status was significantly associated with children's expectations (Lowman & Elliott, 2010). In addition, this chapter extended previous research on including the educational attainment of the grandparents. Grandparents' educational attainment was found to be associated with mothers' expectations, over and above family and school factors. In addition, children whose grandparents had a tertiary degree held high expectations for their future education. However, this association was no longer significant once mothers' expectations and family factors were considered. This suggests that grandparents' educational attainment influences children's expectations via mothers' expectations and families socio-economic status. This result is consistent with previous research showing that grandparents' education level influences parents' socio-economic status and the home learning environment, which in turn relates to children's interest in learning and academic performance (Reese, Garnier, Gallimore, & Goldenberg, 2000).

Next, we asked whether the educational expectations of children and those of their mothers were related to children's current academic achievement. Overall, the results of this chapter revealed a positive relationship between both sets of expectations and children's academic achievement. Children's academic performance in Year 5 was significantly related to both children's and mothers' educational expectations, even after accounting for family and school factors.

A more interesting picture emerged from comparing the associations between both sets of expectations with family and school factors among children with similar levels of academic abilities. Socio-demographic and school factors appeared to have more consistent associations with mothers' and their children's expectations among children with mid-level academic performance. For children with a high level of academic performance, neither the children's nor their mothers' expectations were affected by their child's gender. Among these children, both Australian/NZ-born and overseas-born mothers held high expectations for their children's education. Additionally, among this group,

the majority of children whose mothers were born overseas expected to obtain a university degree. This was also the case for children whose mothers were born in Australia and NZ. For children with a low level of academic performance, their expectations were not significantly related to school factors. Results suggest that children's academic performance should be considered when evaluating the contribution of socio-demographic and school characteristics to educational expectations of parents and their child.

Another key finding is that children's educational expectations were significantly associated with their academic achievement motivation. Children who held high expectations for their educational attainment also tended to be intrinsically motivated in their learning. This finding is in line with previous studies. For example, a lack of academic interest has been found to be a major reason for leaving school (Bridgeland, DiIulio Jr, & Morison, 2006). Results also reveal that children's expectations for their educational achievement were positively related to their motivation for performing better than other children (when adopting performance-approach goals), developing their academic competence (when adopting mastery-approach goals) and avoiding appearing less competent than their peers (when adopting performance-avoidance goals). In addition, children's expectations for their education were negatively related to their motivation of avoiding obtaining grades that were worse than what they had previously achieved (when adopting mastery-avoidance goals). Results of this chapter further highlight the importance of children's educational expectations as a psychological aspect of their academic performance.

Several potential topics could be explored in the future. Firstly, the current chapter only focused on mothers who were the primary caregivers. The expectations of fathers, as well as mothers who are the secondary caregivers of their child, should be further explored. In particular, it would be of great interest to investigate whether fathers have similar expectations for boys and girls. It is also worth noting that children's expectations and school performance can also be influenced by teachers' views of how far children can go with their future education (Benner & Mistry, 2007; Gregory & Huang, 2013). It would be interesting to extend the outcomes studied to include longitudinal analyses of children's own expectations at different ages, in order to assess the changes in children's expectations throughout their schooling. More importantly, future studies could investigate the mechanisms by which family and school factors influence the educational expectations of both children and their parents, to help students overcome the barriers to achieving high levels of education.

Overall, this chapter has provided a general overview of associations between both mothers and their children's educational expectations and a range of family, social and school characteristics. Results reveal that the educational expectations of both children and their mothers are related to real academic experiences and socio-economic status. These findings showed that the educational expectations of parents and children are both highly relevant for children's achievement motivation and outcomes from Year 3 to Year 7. This is valuable information that could assist educational services to develop targeted interventions to improve educational and occupational outcomes of children from a wide range of cultural, socio-economic and school backgrounds, as well as students with varied academic achievements.

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Early onset of crime and delinquency among Australian children

7

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7.1 Introduction

Early involvement in crime and delinquency (i.e., in late childhood and/or early adolescence) is a significant risk factor for a range of problems throughout the life course. The origins of much antisocial and criminal behaviour in adolescence and adulthood can be traced back to early childhood (Vassallo, Smart, Sanson, Dussuyer, & Victoria, 2002). As teenagers, early-onset offenders are at greater risk of school failure, drug and alcohol abuse, unsafe sexual behaviour, unwanted pregnancy and dangerous driving compared to late-onset offenders. In addition, early-onset offenders are thought to play an important role in promoting antisocial behaviour among their same-age peers in the middle and later stages of adolescence by providing examples for others to imitate and encouraging others within their peer groups to offend (Moffitt, 1993). Early-onset offending is also an important risk factor for life-course-persistent offending (Farrington, Lambert, & West, 1998; Loeber & Farrington, 1998; Loeber & Farrington, 2000; Moffitt, 1993) and associated problems, including unemployment, financial difficulties, substance dependence, mental and physical illness, troubled interpersonal relationships, criminal victimisation, and family violence (e.g., Moffitt, Caspi, Harrington, & Milne, 2002; Piquero, Daigle, Gibson, Piquero, & Tibbetts, 2007).

Early-onset offenders are widely believed to differ from adolescent-onset offenders both in terms of the underlying causes of their offending and their long-term patterns of behaviour (Moffitt, 1993; Patterson, DeBarysche, & Ramsay, 1989; Taylor, Iacono, & McGue, 2000). For example, early-onset criminal behaviour may be influenced more strongly by personality or temperament and by early environmental conditions (e.g., harsh and erratic parenting in response to early behavioural problems) than by subsequent changes in the family, school or peer environment (Aguilar, Sroufe, Egeland, & Carlson, 2000; Moffitt, 1993; Moffitt et al., 2002). These differences and the time at which they emerge are often used to justify distinct prevention strategies, especially an emphasis on early intervention (e.g., Webster-Stratton & Taylor, 2001). These strategies carry specific challenges, including how to accurately recognise children most at risk and how to modify their behaviour once they have been identified.

Most children who appear to be on an early-onset and life-course-persistent pathway, however, do not develop into young offenders (Loeber, Farrington, & Petechuk, 2003). Despite exhibiting behaviours that place them at risk of an early-onset pathway, these children manage to avoid crime, or delay and minimise their involvement. Results from the Australian Temperament Project, a longitudinal study of a representative community sample of Victorian children, show that developmental pathways of antisocial behaviours tend to change over late childhood and early adolescence, so intervention may still be effective during that period (Smart et al., 2003). This study reported that some children who exhibited antisocial behaviours in early childhood developed better management and control of their emotions by late adolescence. Understanding how and why these children change course could provide important insights into how to develop and target programs to prevent life-course-persistent offending.

In this chapter, we examine the early onset of crime and antisocial behaviour among a representative sample of Australian children (aged 12–13 years) and the factors that are associated with early onset,

[1] At the time of writing, Walter Forrest was a Research Fellow at AIFS.

using data from the K cohort of the Longitudinal Study of Australian Children (LSAC). A number of personal and social characteristics—including parenting practices and the temperament of the child—have been found to influence children's problem behaviours, such as violence (Smart et al., 2003, 2005; Vassallo et al., 2002). However, most studies have focused on children's antisocial behaviours in late adolescence or early adulthood (e.g., 17–20 years). To date, few studies have examined the extent of early-onset crime and delinquency among a nationally representative sample of Australian children. One study of Australian children, all born in a single hospital in Brisbane between 1981 and 1983, suggests that children's aggression and attention problems at 5 years of age are associated with antisocial behaviour at age 14 (Bor, McGee, & Fagan, 2004).

A key focus of the chapter is to identify children who are at risk of early-onset crime and delinquency based on their childhood behaviour and circumstances, but do *not* become involved in crime and delinquency in late childhood and early adolescence. The results in this chapter can be used to inform targeted programs to reduce early offending and potentially protect children, their families and their communities from the consequences of ongoing criminal and delinquent behaviour. To that end, the chapter aims to answer the following research questions:

- What percentage of Australian children are involved in crime and delinquency in late childhood and early adolescence?
- What factors place children at risk of involvement in crime and delinquency in late childhood and early adolescence?
- What factors can help differentiate at-risk children who do not become involved in crime and delinquency at this early stage from those who do?

7.2 Data and method

We examined early involvement in crime and delinquency among those K cohort children who participated in Wave 5 of LSAC—the first point at which the children (aged 12–13 years) were asked to report on their criminal or delinquent behaviour (n = 3,581). For children for whom we *also* had complete information on the risk and protective factors of interest at Wave 1 (n = 2,732) and Wave 4 (n = 2,410), we then investigated the factors that placed them at risk of involvement in crime and delinquency at age 12–13. We used information from Wave 1 to test whether there were any risk or protective factors in preschool children (aged 4–5 years) that were associated with crime or delinquency at Wave 5. We also used Wave 4 data, as this is the latest point of influence of risk or protective factors that precede early-onset crime or delinquency at Wave 5.

Involvement in crime and delinquency

Involvement in crime and delinquency was measured using self-reports. A short form of the Moffitt and Silva (1988) Self-Report of Delinquency scale was used to measure adolescents' involvement in antisocial behaviour. At 12–13 years, children in the K cohort were asked how many times in the last 12 months they had:

- got into physical fights in public;
- carried a weapon like a knife, gun or piece of wood;
- used force or threats to get money or things from someone;
- gone around with a group of three or more kids damaging property or getting into fights;
- stolen something from a shop;
- stolen money or other things from another person;
- stolen something out of a parked car;
- broken into a house, flat or vehicle;
- taken a vehicle (e.g., car, motorbike) for a ride or drive without permission;
- drawn graffiti in public places;
- purposely damaged or destroyed others' property;
- damaged a parked car (e.g., broken an aerial, slashed tyres, scratched paint); and
- started a fire in a place where you should not burn anything.

The children were also asked how many times they had:

- run away from home and stayed away overnight or longer;
- skipped school for a whole day;
- been suspended or expelled from school; and
- been caught by police for something you had done.

Response categories recorded the number of times that respondents had committed each act, ranging from zero (not at all) to five or more times.

The first four items above provide information about the extent to which children in the K cohort had been involved in a range of violent crimes (e.g., "used force or threats to get money or things from someone") and the next nine items concern property offences (e.g., "stolen something from a shop"). The remaining four items provide information about children's involvement in minor status offences (e.g., "skipped school for a whole day") and whether their behaviour had attracted the attention of authorities, including the police (e.g., "been suspended or expelled from school").

7.3 Results

How common is early crime and delinquency?

In this section, we describe the extent of self-reported involvement in crime and delinquency among the LSAC K cohort children. Given that LSAC is based on a nationally representative sample of children, our results provide the first ever description of the prevalence of early-onset crime and delinquency among the broader population of Australian 12–13 year-olds.

Figures 7.1 and 7.2 show the percentages of children who reported committing each of the four violent crimes and nine property offences at least once in the 12 months prior to their interview. Figure 7.3 illustrates the percentages of children who engaged in either of the status offences and who were either suspended/expelled from school or apprehended by the police for their behaviour. Given that boys and girls differ dramatically in their involvement in crime and delinquency (e.g., Steffensmeier & Allan, 1996), we report the prevalence of these behaviours separately for boys and girls.

Violence

Of all the self-reported crime and delinquency items included in the survey, fighting was the most common (Figure 7.1). Boys were substantially more likely than girls to have been involved in fights; in fact, of all the criminal and delinquent acts recorded in LSAC, the gender difference was largest for fighting. Only 8% of girls reported getting into fights in public, while almost one in four boys (24%) were involved in at least one fight in the year preceding the survey.

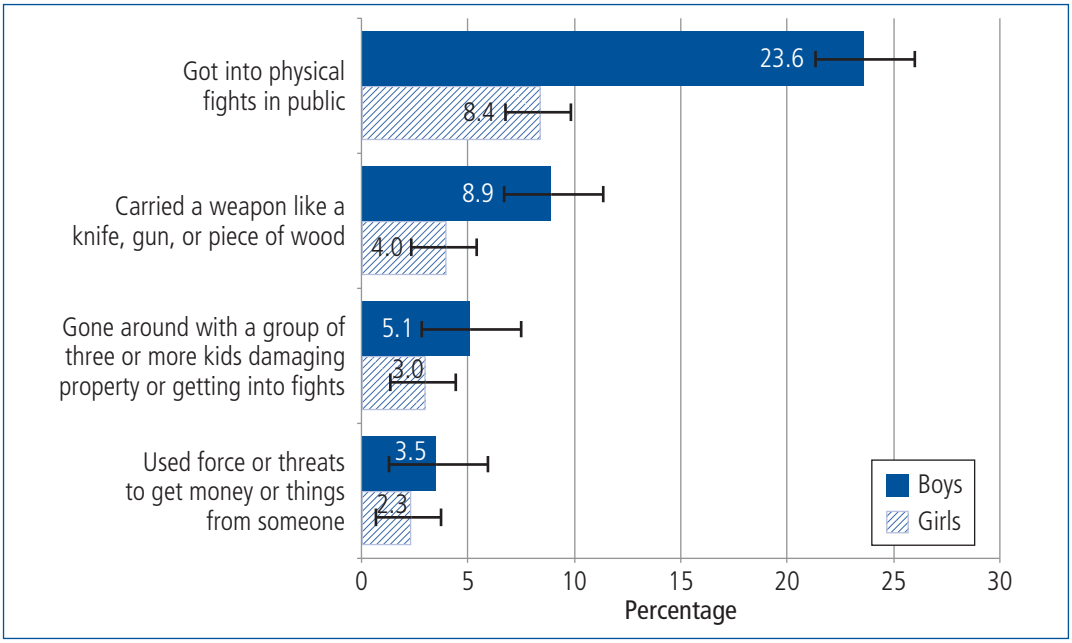
In comparison to fighting, other forms of violent behaviour were less common:

- 9% of boys and 4% of girls reported carrying a weapon;
- 5% of boys and 3% of girls admitted to being involved in delinquent groups;
- 4% of boys and 2% of girls had used force or threats to get things from someone.

Whether in public or private, fighting is a potentially serious form of antisocial behaviour that risks injury to everyone involved. Given that almost one in ten boys reported carrying weapons, some of the fights that the LSAC children referred to may have been reasonably serious.

As an indicator of the potential for serious and chronic offending in later life, however, fighting may not be as useful as some of the other forms of crime and delinquency featured in Figure 7.1. First, the question about fighting in LSAC potentially covers a broad spectrum of behaviours that range from fairly trivial altercations involving physical contact (e.g., pushing and shoving) to serious acts of violence in which the aim is to cause injury and harm (e.g., punching, kicking, or striking with a weapon). Even if some of the fights described by the children involved weapons, most may have been minor scraps or scuffles. Second, in comparison to other forms of crime and delinquency, fighting is fairly common among the LSAC boys. This implies that a large percentage of the boys who had been in fights had not engaged in any of the other types of criminal or delinquent behaviours. In other words, many more children have problems resolving their interpersonal

differences peacefully than are showing signs of more serious generalised antisocial conduct across a range of different behaviours. Findings from the Australian Temperament Project also showed that fighting in early adolescence is widespread, and more common than other forms of crime or delinquency, involving just over half of boys and about 15% of girls aged 13–14 years in the mid-1980s (Vassallo et al., 2002).



Notes: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between boys and girls. Sample size: *n* = 3,581.

Figure 7.1: Percentage of 12–13 year old boys and girls involved in violence in the last 12 months, K cohort, Wave 5

Property offences

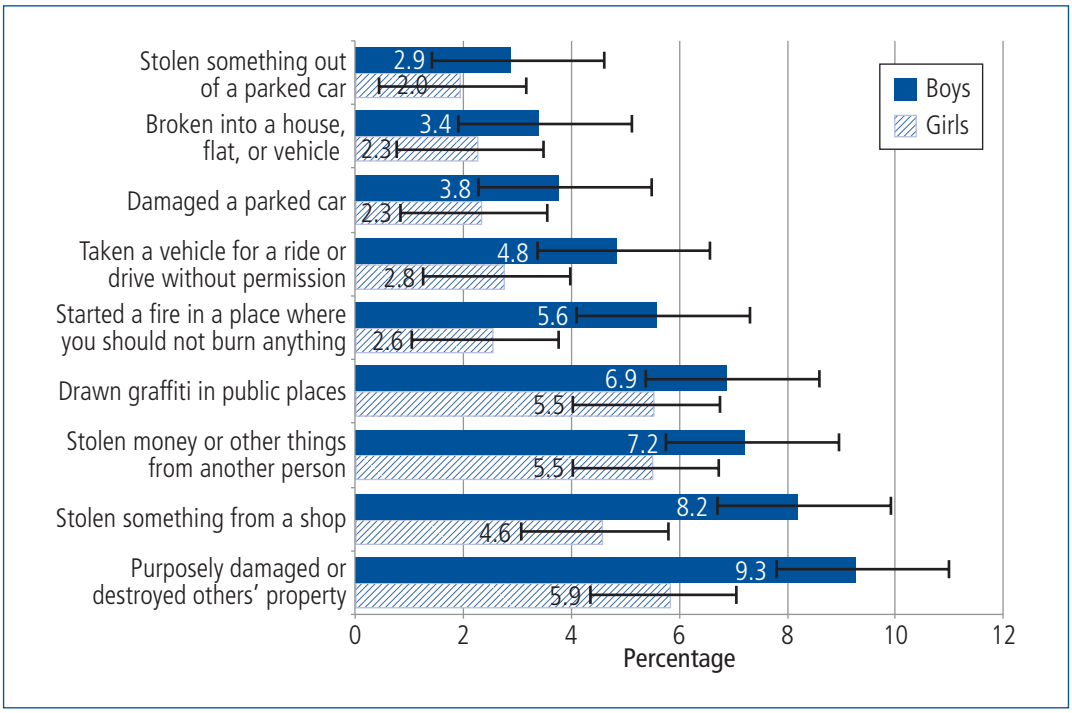
Of the property offences, Figure 7.2 (on page 135) shows that damaging or destroying other people's property was the most common property crime (9% of boys and 6% of girls), followed by stealing from a shop, and stealing from another person. Other offences were less common. For example, only 3% of boys and 2% of girls had stolen something from a parked car; and 5% of boys and 3% of girls had taken a vehicle for a ride without permission. While more boys than girls committed each of these offences, the differences were only statistically significant for starting a fire, stealing from a shop, and purposely damaging property.

Status offences and contact with authorities

The second most prevalent type of delinquency (after fighting) was truancy. Fifteen per cent of boys and 11% of girls admitted to having "skipped school for a whole day" at least once in the previous 12 months. Figure 7.3 (on page 135) also indicates that 6% of boys and 4% of girls had run away from home overnight or longer in the year preceding the interview.

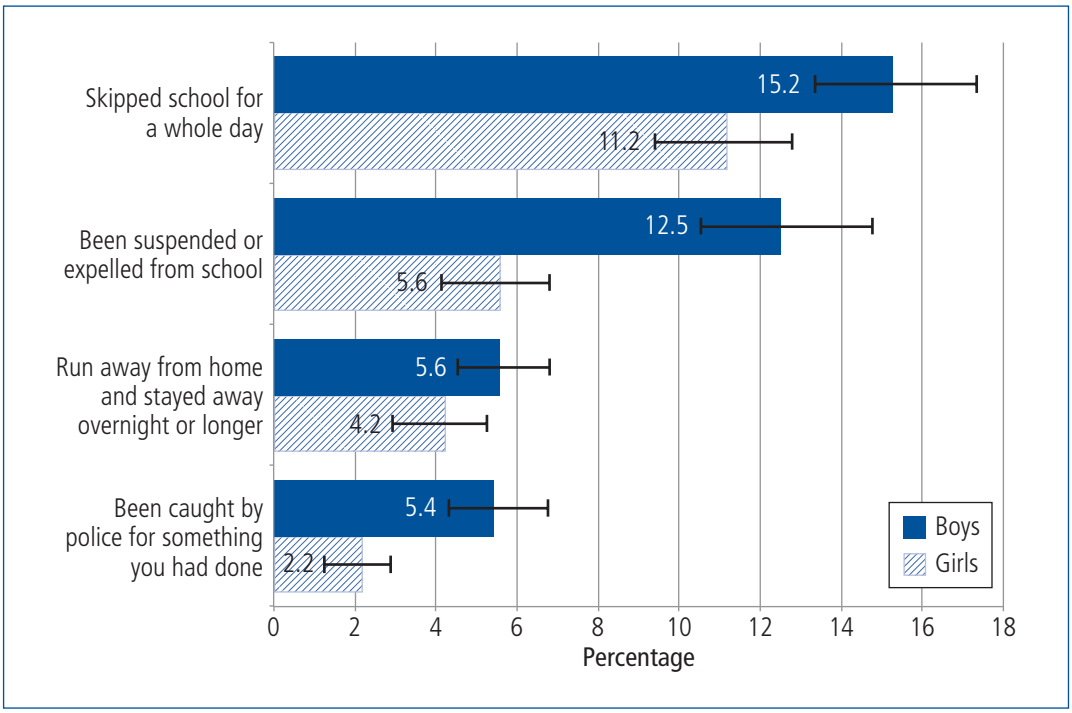
Interestingly, 13% of boys and 6% of girls had been suspended or expelled from school, less than those who admitted to skipping school, especially among girls.

In terms of engagement with police, 5% of boys and 2% of girls had been caught by the police for something they had done. Although this might indicate their involvement in more serious offences, that these children came into contact with the police does not necessarily mean that they were arrested, charged, appeared in court, or were convicted. In fact, only a minority of these cases are likely to have proceeded to the child being charged (e.g., Smart et al., 2005).



Notes: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between boys and girls. Sample size: *n* = 3,581.

Figure 7.2: Percentage of 12–13 year old boys and girls involved in property offences in the last 12 months, K cohort, Wave 5



Notes: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between boys and girls. Sample size: *n* = 3,581.

Figure 7.3: Percentage of 12–13 year old boys and girls involved in status offences in the last 12 months, K cohort, Wave 5

Which children are at risk of early involvement in crime or delinquency?

To help explain these patterns, we examined the links between 34 different risk and protective factors and the children's involvement in crime or delinquency at age 12–13. Rather than examining each type of behaviour separately, we created a single indicator of involvement in crime or delinquency for each child based on whether he or she had committed any of the 13 violent crime or property offences at least once in the year preceding the interview. This method of measuring involvement in crime or delinquency is consistent with convention and reflects the tendency for offenders to engage in a variety of delinquent acts as opposed to "specialising" in particular types of antisocial behaviour (Gottfredson & Hirschi, 1990).

We excluded the status offences and the measures of official reactions to children's behaviour (e.g., being suspended or expelled) because they are likely to reflect much more than a child's propensity for problem behaviours. For example, being suspended or expelled may depend on the school disciplinary environment as much as it depends on the behaviour of the child involved.

The aim of this analysis is to identify factors that affect the chances of children engaging in early-onset crime or delinquency and to pinpoint the children who are most likely to engage in crime or delinquency in early adolescence, based on their earlier life circumstances and patterns of behaviour. We investigated links between crime or delinquency, and compiled a comprehensive list of risk and protective factors implicated in numerous studies conducted over the last 30 years (e.g., Farrington & West, 1993; Loeber & Dishion, 1983; Loeber & Farrington, 2000; Patterson, Forgatch, Yoerger, & Stoolmiller, 1998; Tremblay, Pihl, Vitaro, & Dobkin, 1994). These cover a range of broad categories, including:

- child demographic characteristics (e.g., gender, ethnicity);
- parental characteristics (e.g., mother's age, maternal psychological problems);
- family and household characteristics (e.g., socio-economic position of family);
- pregnancy and birth complications (e.g., mother smoked during pregnancy);
- child psychosocial characteristics (e.g., difficulty temperament, early disruptive behaviour); and
- parenting styles (e.g., harsh parenting, absence of parental warmth).

Details of the 34 variables, and how they were measured, are provided in Table 7.1.

Table 7.1: Risk and protective factors for children engaging in crime or delinquency at 4–5 years and 10–11 years

Variable	Categories [a]	Description	Age of child
Child demographic characteristics			
Child gender	1 = male 2 = female (ref.)		4–5 years
Child Indigenous status	0 = non-Indigenous (ref.) 1 = Indigenous	Is study child of Aboriginal or Torres Strait Islander origin?	4–5 years
Child language spoken at home	0 = English 1 = non-English	Does study child speak a language other than English at home?	4–5 years
Parental characteristics			
Maternal age	1 = younger (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = older (top 33%)	Age of mother at time of interview.	4–5 years 10–11 years
Parental education	0 = below Bachelor degree 1 = Bachelor degree or higher (ref.)	Highest level of parental education (both Parent 1 and Parent 2).	4–5 years 10–11 years
Family type	0 = two parents (ref.) 1 = single parent	Based on Parent 2's presence in the LSAC household at Wave 1 and Wave 4.	4–5 years 10–11 years

continued on page 137

continued from page 136

Table 7.1: Risk and protective factors for children engaging in crime or delinquency at 4–5 years and 10–11 years

Variable	Categories [a]	Description	Age of child
Maternal psychological distress	1 = low (0–7) (ref.) 2 = moderate (8–12) 3 = high (13–24)	Kessler 6 (K6) scale, a six-item scale measuring psychological distress (e.g., "In the past 4 weeks about how often did you feel so sad that nothing could cheer you up?"). Scores rescaled from 0–24 (Hilton, Scuffham, Sheridan, Cleary, & Whiteford, 2008) and respondents classified as lower, moderate or higher. Higher indicates a mental disorder is very likely.	4–5 years 10–11 years
Maternal problem alcohol consumption	0 = no (ref.) 1 = yes	Single item. Whether Parent 1 had engaged in problematic alcohol use, defined as heavy daily alcohol consumption (> 2 standard drinks for women) or frequent binge drinking (5+ standard drinks in a sitting for women).	4–5 years 10–11 years
Family and household characteristics			
No. of siblings	0 = none (ref.) 1 = one 2 = two 3 = three or more	Number of siblings of the study child in household.	4–5 years 10–11 years
Family socio-economic position	1 = lowest 25% (ref.) 2 = middle 50% 3 = highest 25%	*Z*-score for socio-economic position among all families.	4–5 years 10–11 years
Financial stress	0 = no (ref.) 1 = yes	Whether Parent 1 experienced one or more instances of financial stress in the last 12 months, as indicated by six items (e.g., parent has not been able to pay gas, electricity or telephone bills on time due to a shortage of money).	4–5 years 10–11 years
Unemployed	0 = no (ref.) 1 = yes	Whether both parents were unemployed (in two-parent families) or Parent 1 unemployed (in sole-parent families).	4–5 years 10–11 years
Neighbourhood disadvantage	1 = lower (bottom 33%) 2 = medium (middle 33%) 3 = higher (top 33%) (ref.)	Defined according to the Australian Bureau of Statistics (ABS) Socio-Economic Indexes for Areas (SEIFA), which includes the Index of Relative Socio-Economic Disadvantage (SIRD).	4–5 years 10–11 years
Region of residence	0 = urban (ref.) 1 = rural	Using the Australian Statistical Geography Standard (ASGS; Edition 2011: Section of State), defined as urban (major and other urban areas with population > 1,000) or regional (bounded locality and rural balance).	4–5 years 10–11 years
Legal problems	0 = no (ref.) 1 = yes	Whether Parent 1 or Parent 2 had problems with the police or had a court appearance in the last 12 months.	4–5 years 10–11 years
Parental injury or assault	0 = no (ref.) 1 = yes	Whether Parent 1 or Parent 2 had suffered a serious illness, injury or assault in the last 12 months.	4–5 years 10–11 years
Pregnancy and birth complications			
Used alcohol during pregnancy	1 = no (ref.) 2 = occasionally 3 = most days	Whether mother consumed alcohol during the pregnancy.	4–5 years
Smoked during pregnancy	1 = no (ref.) 2 = occasionally 3 = most days	Whether mother smoked cigarettes during pregnancy.	4–5 years
High blood pressure in pregnancy	0 = no (ref.) 1 = yes	Whether mother had high blood pressure during pregnancy, requiring admission to hospital or medication.	4–5 years
Postnatal depression	0 = no (ref.) 1 = yes	Whether mother suffered from postnatal depression after the birth of the child.	4–5 years
Birth weight of study child	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Birth weight percentile based on US Centers for Disease Control and Prevention (CDC) growth charts.	4–5 years

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Table 7.1: Risk and protective factors for children engaging in crime or delinquency at 4–5 years and 10–11 years

Variable	Categories [a]	Description	Age of child
Child psychosocial characteristics			
Intelligence	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Wechsler Intelligence Scale for Children (WISC-IV). Standardised score based on number of correct items and provided norms.	4–5 years 10–11 years
Temperament—Reactivity	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Short Temperament Scale for Children (STSC) Reactive subscale. Average of four items (e.g., when angry, child yells or snaps at others).	4–5 years 10–11 years
Temperament—Persistence	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	STSC Persistence subscale. Average of four items (e.g., child likes to complete one task or activity before going onto the next).	4–5 years 10–11 years
Temperament—Sociability	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	STSC Sociability subscale. Average of four items (e.g., child is outgoing with adult strangers outside the home). Scores of the first two items were reverse scored. High scores indicate high levels of sociability temperament.	4–5 years 10–11 years
Attention problems	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = high (top 33%)	Strengths and Difficulties Questionnaire (SDQ) Hyperactivity subscale. Average of five items (e.g., child easily distracted, concentration wanders).	4–5 years 10–11 years
Conduct problems	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Abridged SDQ Conduct Problems subscale. Average of three items (e.g., child often fights with other children or bullies them).	4–5 years 10–11 years
Emotional problems	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	SDQ Emotional Problems subscale. Average of five items (e.g., child is often unhappy, downhearted or tearful).	4–5 years 10–11 years
Prosocial orientation	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	SDQ Prosocial subscale. Average of five items (e.g., child is considerate of other people's feelings).	4–5 years 10–11 years
Peer problems	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	SDQ Peer Problems subscale. Average of five items (e.g., picked on or bullied by other children)	4–5 years 10–11 years
Responsiveness to punishment [b]	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Average of the last three items of the Consistent Parenting Scale: "How often is this child able to get out of a punishment when he/she really sets his/her mind to it?", "How often does this child get away with things that you feel should have been punished?"; and "When you discipline this child, how often does he/she ignore the punishment?".	4–5 years 10–11 years
Parenting styles			
Harsh parenting	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Average of four items of the Angry Parenting Scale (e.g., "How often are you angry when you punish this child?").	4–5 years 10–11 years
Parental warmth	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Average of six items (e.g., "How often do you express affection by hugging, kissing and holding this child?")	4–5 years 10–11 years
Consistent parenting [b]	1 = lower (bottom 33%) (ref.) 2 = medium (middle 33%) 3 = higher (top 33%)	Average of the first two items of the Consistent Parenting Scale: "When you give this child an instruction or make a request to do something, how often do you make sure that he/she does it?"; and "If you tell this child he/she will get punished if he/she doesn't stop doing something, but he/she keeps doing it, how often will you punish him/her?".	4–5 years 10–11 years

Notes: [a] Those variables that are categorised into three groups (lower, medium, higher) are divided based on percentile scores, with the bottom third classified as lower, the middle third as medium, and the top third as higher. Allocations to each subgroup are therefore relative to each other rather than being absolute measures.

[b] The Consistent Parenting scale originally consisted of five items. For the purpose of this chapter, we treated the last three items of this scale as an independent measure of "responsiveness to punishment". Factor analyses were conducted for these two measures at each wave. Cronbach's alpha coefficients indicated high internal consistencies for both measures (e.g., alpha was 0.89 for consistent parenting and 0.92 for responsiveness to punishment at Wave 1).

Although differences between early-onset offenders and other children can emerge in early childhood, long before they commit their first criminal or delinquent offences, the factors that show the strongest association with such behaviours are likely to be those measured around the time the offences occurred.

To help determine how early in the life course we could identify children who were at risk of crime or delinquency, we sought to measure each risk and protective factor based on information collected at two points in time: first, when the children were 4–5 years of age (Wave 1); and second, at 10–11 years (Wave 4).[2] We focused on 4–5 years because that was the earliest possible point at which information on children in the K cohort could be collected. By contrast, we selected 10–11 years because that was the age of the children at the time of the last survey conducted before the measurement of criminal and delinquent behaviour at 12–13 years (Wave 5). As a result, all risk and protective factors were observed prior to the measurement of the children's involvement in crime or delinquency.

We estimated the differences between the percentage of children engaged in crime or delinquency by each risk and protective factor in a series of logistic regressions,[3] and we report these results as "unadjusted differences" in the tables following. We then included all 35 risk and protective factors in a statistical model that adjusted for all factors simultaneously in one logistic regression model. The results of these analyses, which we refer to as "adjusted differences", are reported alongside the unadjusted differences. They indicate differences in the percentages of children engaging in criminal or delinquent acts after accounting for other factors. Thus, the *unadjusted* differences tell us whether the percentage of children engaging in crime or delinquency is higher for some groups than others (e.g., higher for boys than girls), while the *adjusted* estimates indicate whether that difference is independent of other factors and hence attributable to the factor in question.

Child demographic characteristics

Table 7.2 reports the adjusted and unadjusted differences in the percentages of children engaging in crime or delinquency at 12–13 years, by key demographic characteristics at 4–5 and 10–11 years.

Table 7.2: Percentage point differences in crime or delinquency at 12–13 years, by child demographic characteristics at 4–5 years and 10–11 years

Child demographic characteristics	4–5 years (Wave 1)		10–11 years (Wave 4)	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Child gender (ref. = female)				
Male	16.56 ***	15.79 ***	16.93 ***	13.85 ***
Child Indigenous status (ref. = non-Indigenous)				
Indigenous	21.45 *	14.51	27.65 **	21.78 *
Child language spoken at home (ref. = English)				
Non-English	–3.70	–0.50	–0.28	2.68

Notes: The number of children participating at each wave of LSAC varies. Therefore, the samples used to estimate the influence of risk and protective factors at 4–5 and 10–11 years also differ slightly. This means that some of the differences observed between the apparent effects of the same risk and protective factors measured at different points in time could be due to changes in the size or composition of the estimation samples. Adjusted analyses control for child demographic, maternal, and family and household characteristics; pregnancy and birth complications; and parenting style. Sample sizes—Wave 5: n = 3,581; Wave 1: n = 2,732; Wave 4: n = 2,410. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Child gender emerged as a significant risk factor in our analyses. Boys were substantially more likely to be involved in crime or delinquency by 12–13 years than were girls. Relative to girls, the unadjusted proportion of boys who engaged in crime or delinquency was almost 17 percentage points higher. These gender differences were not attributable to other risk and protective factors. Even after adjusting for other characteristics already apparent at 4–5 years, the prevalence of crime or delinquency among

[2] The Matrix Reasoning Test (WISC-IV) was first used at 6–7 years. As a result, we used the child's matrix reasoning score at ages 6–7 alongside the risk and protective factors from 4–5 years. Information about the child's birth weight or his or her mother's experiences in pregnancy was collected once, when the children were aged 4–5.

[3] Analyses were conducted using logistic regression with longitudinal sample weights. Results presented in the tables following reflect estimated marginal effects.

boys was still 15.8 percentage points greater than girls. When adjusting for characteristics observed at 10–11 years, the proportion was 13.9 percentage points higher than for girls.

Indigenous children were more likely to report engaging in crime or delinquency than non-Indigenous children (21.5 and 27.7 percentage points higher in Waves 1 and 4 respectively). At 4–5 years, once all other characteristics were taken into account, the seemingly higher rates of crime or delinquency found among Indigenous children of that age were not statistically significant. By age 10–11 though, after adjusting for characteristics of the children, Indigenous children were significantly more likely to be engaged in crime or delinquency than non-Indigenous children (21.8 percentage points higher). This could mean that risk and protective factors emergent in early childhood better account for the seemingly higher rates of crime or delinquency among Indigenous children than characteristics measured in late childhood (10–11 years). Alternatively, this could result from changes in the composition of the estimation samples.

Previous studies have reported higher rates of crime or delinquency among *children who spoke a language other than English (LOTE) at home*. For example, Brindis, Wolfe, McCarter, Ball, and Starbuck-Morales (1995) found that immigrant and native-born Latino children in the United States engaged in a greater number of risk-taking behaviours than native non-Hispanic children. However, we did not observe a significant difference in LSAC children's criminal or delinquent behaviours at 12–13 years between children from English-speaking families and children from non-English-speaking families.

Parental characteristics

We also examined the potential influence of the characteristics of the children's parents, and their mothers in particular (Table 7.3).[4] The children of mothers in the medium and older age groups were at lower risk of engaging in crime or delinquency (4.7 and 5.6 percentage points respectively at 4–5 years) than younger mothers. The percentage of children engaging in crime or delinquency within families in which either parent had a university-level education was smaller also—7.2 and 6.0 percentage points lower at 4–5 and 10–11 years respectively—than among other families.[5] Once other risk and protective characteristics were taken into account, however, both maternal age and the parental education failed to differentiate children engaging in crime or delinquency at 12–13 years from their less antisocial counterparts. Lower rates of delinquency observed among children in these families, therefore, are likely due to other risk and protective factors.

Table 7.3: Percentage point differences in crime or delinquency at 12–13 years, by parental characteristics at 4–5 years and 10–11 years

	4–5 years (Wave 1)		10–11 years (Wave 4)	
Parental characteristics	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Maternal age (ref. = younger: bottom 33%)				
Medium (middle 33%)	–4.67 *	–0.07	–3.77	1.30
Older (top 33%)	–5.56 *	–0.30	–4.42	0.03
Parental education (ref. = Bachelor degree or higher)				
Below Bachelor degree	7.21 ***	0.39	5.98 **	–0.92
Family type (ref. = two parents)				
Single parent	14.71 ***	6.67	13.10 ***	6.11
Maternal psychological distress (ref. = low: 0–7)				
Moderate (8–12)	4.52	–1.19	3.13	–4.59
High (13–24)	18.68 **	3.54	22.69 **	10.82
Maternal problem alcohol consumption (ref. = no)				
Yes	4.57	1.19	8.13 **	6.21 *

Notes: Multivariate analyses adjusted for child demographic, maternal, and family and household characteristics; pregnancy and birth complications; and parenting style. Sample sizes—Wave 5: $n = 3,581$; Wave 1: $n = 2,732$; Wave 4: $n = 2,410$. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

[4] These risk and protective factors relate to Parent 1, which in most cases is the child's mother. Accordingly, in this section, we refer to the characteristics of mothers.

[5] Parental education, which relied on information from both mothers and fathers, was measured only at age 4–5.

Compared to other children, those who were living with unpartnered mothers at 4–5 and 10–11 years were more likely to engage in crime or delinquency at age 12–13 (by 14.7 and 13.1 percentage points respectively). Once all other characteristics at 4–5 and 10–11 years were taken into account, however, the differences by mother's partnership status were no longer significant.

Relative to children of mothers with low psychological distress, those whose mothers had high levels of psychological distress at 4–5 and 10–11 years were at greater risk for crime or delinquency at 12–13 years (by 18.7 and 22.7 percentage points respectively). Once again, however, after all other characteristics were adjusted for in the statistical model, there were no longer any statistically significant differences in crime or delinquency by maternal psychological distress.

Children who at 10–11 years had mothers who were engaging in problem drinking were more likely (by 8.1 percentage points) to be engaging in crime or delinquency at 12–13 years than those whose mothers were not problem drinkers, even after adjusting for other characteristics (6.2 percentage points more likely).

Family and household characteristics

Six of the eight family or household characteristics examined were associated with subsequent delinquency (see Table 7.4).

Table 7.4: Percentage point differences in crime or delinquency at 12–13 years, by family and household characteristics at 4–5 and 10–11 years

Family and household characteristics	4–5 years (Wave 1)		10–11 years (Wave 4)	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Number of siblings in household (ref. = none)				
One	–4.33	0.60	–1.77	0.84
Two	–1.67	1.66	–2.85	–0.43
Three or more	0.35	4.47	–2.42	–2.41
Family socio-economic position (ref. = lowest 25%)				
Middle 50%	–9.56 ***	–4.61	–11.28 ***	–5.32
Highest 25%	–14.47 ***	–5.80	–13.36 ***	–5.48
Financial stress (ref. = no)				
Yes	10.18 ***	3.76	7.96 *	–0.41
Unemployed (ref. = no)				
Yes	14.62 ***	0.29	1.71	–5.26
SEIFA Index of Disadvantage (ref. = higher: top 33%)				
Medium (middle 33%)	–5.04 *	–3.13	–2.03	–0.24
Lower (bottom 33%)	–6.00 *	–1.90	–5.39 *	–2.23
Region of residence (ref. = urban)				
Rural	–1.71	–4.12 *	–1.72	–3.48
Legal problems (ref. = no)				
Yes	14.69	2.04	12.33	0.34
Parental injury or assault (ref. = no)				
Yes	1.83	–0.23	7.50 *	6.42 *

Notes: Multivariate analyses adjusted for child demographic, maternal, and family and household characteristics; pregnancy and birth complications; and parenting style. Sample sizes—Wave 5: $n = 3,581$; Wave 1: $n = 2,732$; Wave 4: $n = 2,410$. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Compared to children from families with a socio-economic position in the lowest 25%, children growing up in more advantaged families were less likely to be engaging in crime or delinquency at 12–13 years. This was the case irrespective of whether family socio-economic position was measured when children were aged 4–5 or 10–11 years; nonetheless, once again, when all other characteristics were taken into account, family socio-economic position was not a statistically significant risk factor.

Similarly, financial stress at 4–5 and 10–11 years was associated with higher rates of crime or delinquency at 12–13 years (by 10.2 and 8.0 percentage points respectively), yet that also failed to differentiate early-onset offenders from their non-offending counterparts once other factors were taken into account.

At age 4–5 years, experiencing financial stress and living in a household with no working parent (i.e., two-parent households where both were unemployed, or a single parent who was unemployed) were risk factors for crime or delinquency (10.2 and 14.6 percentage points more likely respectively), although these associations also appeared to be explained by other factors, as indicated by the results of the adjusted models.

Compared to those children living in areas of high levels of disadvantage (as measured by SEIFA), children living in more advantaged areas had lower rates of crime or delinquency (by 6.0 and 5.4 percentage points at 4–5 and 10–11 years respectively). As with family socio-economic position, this association was no longer statistically significant when other characteristics were taken into account.

Living in a rural area at 4–5 years was associated with a reduced involvement in crime or delinquency at age 12–13 after controlling for other factors (4.1 percentage points less likely to be delinquent), even though children in rural areas were just as likely to engage in delinquency as their urban counterparts, according to the results of the unadjusted analyses.

Finally, having a parent injured, assaulted or experiencing an illness was a risk factor when children were 10–11 years of age (7.5 percentage points more likely to be delinquent than children whose mothers did not report experiencing such problems). These children still had higher rates of crime or delinquency (by 6.4 percentage points) once other characteristics at 10–11 years of age were taken into account. Children whose parents have been injured or assaulted might have higher exposure to violence than others. Bacchini, Miranda, and Affuso (2011) found that exposure to community violence (both as a victim and witness) was associated with more involvement in antisocial behaviours among young adolescents. In addition, injury and illness could reduce parents' ability to monitor their child's activities and adaptation, which has also been reported to relate to children's antisocial behaviours (Barnes, Hoffman, Welte, Farrell, & Dintcheff, 2006).

Pregnancy and birth complications

In terms of pregnancy and birth complications (see Table 7.5), children whose mothers consumed alcohol frequently during pregnancy appeared to be less involved in delinquency after controlling for other factors (15.9 and 14.7 percentage points). These patterns emerged in the adjusted analyses even though children whose mothers drank while they were pregnant were not more involved in crime or delinquency (as indicated by the results of the unadjusted analyses).

Table 7.5: Percentage point differences in crime or delinquency at 12–13 years, by pregnancy and birth complications

	4–5 years (Wave 1)		10–11 years (Wave 4)	
Pregnancy and birth complications	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Used alcohol during pregnancy (ref. = no)				
Occasionally	0.39	0.24	–0.15	–0.43
Most days	–13.86	–15.93 *	–13.72	–14.66 *
Smoked during pregnancy (ref. = no)				
Occasionally	12.52 **	7.87 *	10.05 **	6.14
Most days	17.98 ***	7.88 *	18.92 ***	9.06 *
High blood pressure in pregnancy (ref. = no)				
Yes	0.01	1.81	–2.51	–2.78
Postnatal depression (ref. = no)				
Yes	1.08	–2.04	1.03	–2.37
Birth weight of study child (ref. = lower: bottom 33%)				
Medium (middle 33%)	2.41	5.08 *	–1.09	1.28
Higher (top 33%)	0.29	3.41	–2.11	1.19

Notes: Multivariate analyses adjusted for child demographic, maternal characteristics, and family and household characteristics; pregnancy and birth complications; and parenting style. Sample sizes—Wave 5: n = 3,581; Wave 1: n = 2,732; Wave 4: n = 2,410. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

In addition, smoking occasionally or frequently during pregnancy was a significant risk factor, even when other characteristics were taken into account (7.9 percentage points higher for children at age 4–5 years than for children whose mother did not smoke at all during pregnancy). Children whose mothers smoked frequently during pregnancy were more likely (by 18.0 and 18.9 percentage points respectively) to engage in crime or delinquency than children whose mothers did not smoke at all. Even after adjusting for all other characteristics, these children were more likely than others to be involved in delinquency (7.9 and 9.1 percentage points respectively). This is consistent with a growing body of research indicating that smoking in pregnancy is associated with substantially elevated risks of antisocial behaviour among children (Wakschlag, Pickett, Cook, Benowitz, & Leventhal, 2002), although the reasons for this association are subject to much debate (D'Onofrio, Van Hulle, Goodnight, Rathouz, & Lahey, 2012).

Previous research has suggested that prenatal exposure to maternal smoking and drinking is related to negative neurobehavioral outcomes of children, including attention deficit hyperactivity disorder (ADHD), increased externalising behaviour and aggression (Hill, Lowers, Locke-Wellman, & Shen, 2000; Huizink & Mulder, 2006).

We found children's birth weights to be non-significant in unadjusted analyses, but they became significant after multivariate adjustment. Compared to children with lower birth weights, those of medium birth weight were at higher risk of engaging in crime or delinquency once other characteristics were taken into account. This finding is likely to be a statistical artefact.[6]

No other prenatal or postnatal characteristics were linked to patterns of delinquent involvement at 12–13 years.

Child psychosocial characteristics

Table 7.6 (on page 144) shows unadjusted differences in the percentages of children engaged in crime or delinquency at 12–13 years that were associated with different levels of children's intelligence, temperament, social and emotional problems, and responsiveness to punishment. In particular, the following risk factors were associated with an increased risk of crime or delinquency at 12–13 years:

- a more reactive temperament at 4–5 and 10–11 years;
- higher levels of attention problems at 4–5 and 10–11 years;
- more conduct problems at 4–5 and 10–11 years;
- more emotional problems at 10–11 years; and
- greater responsiveness to parental punishment at 4–5 and 10–11 years.

In terms of protective factors, the following characteristics were associated with a decreased risk of crime or delinquency at 12–13 years:

- higher levels of intelligence at 4–5 and 10–11 years;
- a more persistent temperament at 4–5 and 10–11 years;
- a less sociable temperament at 4–5 years; and
- a more prosocial orientation at 4–5 and 10–11 years.

There were several very large differences in the unadjusted rates of crime or delinquency by child psychosocial characteristics. The most notable differences at 4–5 and 10–11 years occurred for persistent temperament (8.6 and 16.0 percentage points lower respectively for higher compared to lower persistence), attention problems (13.5 and 17.8 percentage points higher respectively for higher compared to lower attention problems) and conduct problems (12.4 and 17.1 percentage points higher respectively for higher compared to lower conduct problems).

Very few of these risk and protective characteristics were independently associated with crime or delinquency at 12–13 years, once all other characteristics were taken into account. This applied even to many of those characteristics that appeared to substantially differentiate between early-onset offenders and their non-delinquent counterparts (e.g., persistence and prosocial orientation). The most likely explanation for this is that many of the child risk and protective factors are highly

[6] Children's socio-demographic factors at the age of 4–5 years may be the suppressor factors between their birth weight and delinquency behaviour at 12–13 years.

correlated with one another and do not independently predict the onset of delinquency in early adolescence.

Table 7.6: Percentage point differences in crime or delinquency at 12–13 years, by child psychosocial characteristics at 4–5 and 10–11 years

Child psychosocial characteristics	4–5 years (Wave 1)		10–11 years (Wave 4)	
	Unadjusted	Adjusted	Unadjusted	Adjusted
Intelligence (ref. = lower: bottom 33%)				
Medium (middle 33%)	–4.45	–2.50	–7.62 ***	–3.74
Higher (top 33%)	–8.95 ***	–4.02	–6.67 **	–2.49
Temperament—Reactivity (ref. = lower: bottom 33%)				
Medium (middle 33%)	0.22	–1.05	5.99 *	3.33
Higher (top 33%)	7.70 **	2.60	7.90 ***	–1.98
Temperament—Persistence (ref. = lower: bottom 33%)				
Medium (middle 33%)	–4.14	0.26	–9.60 ***	–1.79
Higher (top 33%)	–8.60 ***	–1.77	–15.96 ***	–3.40
Temperament—Sociability (ref. = lower: bottom 33%)				
Medium (middle 33%)	4.74 *	5.14 *	–3.18	–3.28
Higher (top 33%)	7.95 ***	6.53 **	3.91	4.36
Attention problems (ref. = lower: bottom 33%)				
Medium (middle 33%)	7.26 ***	3.90	7.34 **	0.41
Higher (top 33%)	13.54 ***	4.87 *	17.82 ***	3.04
Conduct problems (ref. = lower: bottom 33%)				
Medium (middle 33%)	6.72 **	4.15	5.19 *	0.01
Higher (top 33%)	12.38 ***	4.23	17.14 ***	5.58
Emotional problems (ref. = lower: bottom 33%)				
Medium (middle 33%)	–1.72	–2.34	1.76	0.34
Higher (top 33%)	2.43	0.05	2.31 *	–4.48
Prosocial orientation (ref. = lower: bottom 33%)				
Medium (middle 33%)	–4.10	0.11	–7.99 **	–2.66
Higher (top 33%)	–5.26 *	0.67	–12.71 ***	–3.43
Peer problems (ref. = lower: bottom 33%)				
Medium (middle 33%)	–1.57	–4.82 *	0.97	0.41
Higher (top 33%)	5.77 *	0.02	11.38 ***	5.21 *
Responsiveness to punishment (ref. = lower: bottom 33%)				
Medium (middle 33%)	–1.56	–4.22	6.89 **	3.23
Higher (top 33%)	5.46 *	–1.74	10.64 ***	1.88

Notes: Multivariate analyses adjusted for child demographic, maternal, and family and household characteristics; pregnancy and birth complications; and parenting style. Sample sizes—Wave 5: $n = 3,581$; Wave 1: $n = 2,732$; & Wave 4: $n = 2,410$. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

There were some child characteristics that remained statistically significant, however, even after other characteristics were taken into account in the adjusted analyses. Compared to children with medium and higher levels of sociability temperament, the proportions of children with lower levels of sociability temperament at 4–5 years who went on to engage in delinquency in early adolescence (12–13 years) were 5.1 and 6.5 percentage points lower. Relative to children with fewer peer problems at age 10–11 years, children with higher levels of peer problems were 5.2 percentage points more likely to engage in crime or delinquency in early adolescence. By contrast, peer problems in early childhood appeared to be negatively related to delinquency in early adolescence: compared to children with lower peer problems at age 4–5 years of age, the percentage of children with a moderate level of peer problems who became involved in crime or delinquency was 4.8 percentage points lower. This reflects a statistically significant difference between children with medium- and lower level problems with peers from the unadjusted analyses; hence, this result is

likely to reflect a genuine difference in the relationship between early-onset crime or delinquency and peer problems, as observed at different ages. Finally, children with higher levels of attention problems at 4–5 years were more likely to be involved in crime or delinquency at 12–13 years even after adjusting for all other factors (4.8 percentage points higher).

Parenting styles

Table 7.7 focuses on differences in children's crime or delinquency at 12–13 years of age by parenting practices at 4–5 and 10–11 years. Harsh parenting was the only parenting style that was associated with crime or delinquency, with higher rates of crime or delinquency found among children whose mothers behaved harshly when those children were 10–11 years. Relative to children who experienced lower levels of harsh parenting, children who experienced either medium or higher levels of harsh parenting had higher rates of crime or delinquency (8.3 and 14.2 percentage points respectively). Statistically significant differences between lower levels and medium and higher levels of harsh parenting at 10–11 years remained even after controlling for all the other factors in the adjusted analysis (5.4 and 8.0 percentage points respectively). Given that the other risk and protective factors included a large number of child characteristics, the independent association between harsh parenting at 10–11 years and crime or delinquency two years later is notable.

Table 7.7: Percentage point differences in crime or delinquency at 12–13 years, by parenting styles at 4–5 and 10–11 years

	4–5 years (Wave 1)		10–11 years (Wave 4)	
Parenting styles	**Unadjusted**	**Adjusted**	**Unadjusted**	**Adjusted**
Harsh parenting (ref. = lower: bottom 33%)				
Medium (middle 33%)	1.83	–0.34	8.29 ***	5.39 *
Higher (top 33%)	5.93 *	0.39	14.18 ***	7.95 **
Parental warmth (ref. = lower: bottom 33%)				
Medium (middle 33%)	0.87	1.08	–0.16	2.96
Higher (top 33%)	2.71	2.67	–1.30	4.78
Consistent parenting (ref. = lower: bottom 33%)				
Medium (middle 33%)	3.31	4.37	0.17	1.69
Higher (top 33%)	0.13	1.34	–3.16	–0.53

Notes: Multivariate analyses adjusted for child demographic, maternal, and family and household characteristics; pregnancy and birth complications; and parenting styles. Sample sizes—Wave 5: $n = 3{,}581$; Wave 1: $n = 2{,}732$; Wave 4: $n = 2{,}410$. Statistically significant differences are noted: * $p < .05$; ** $p < .01$; *** $p < .001$.

Summary of risk and protective factors

In summary, while 25 of the 34 risk or protective factors at age 4–5 or 10–11 years of age were associated with crime or delinquency at 12–13 years, very few distinguished between delinquent and non-delinquent children once all other characteristics were taken into account.

Children were at greater risk of early-onset crime or delinquency even after all other characteristics were taken into account if:

- they were boys;
- they were Indigenous;
- they lived in urban areas (at 4–5 years);
- their mothers consumed alcohol at risky levels (at 10–11 years);
- their mother had been injured, assaulted or had an illness (at 10–11 years);
- their mother smoked regularly during pregnancy;
- they were more sociable (at 4–5 years);
- they had significant attention problems (at 4–5 years);
- they had greater peer problems (at 10–11 years); and/or
- they experienced higher levels of harsh parenting (at 10–11 years).

The effects of multiple risk and protective factors

That very few risk and protective factors remained statistically significant in adjusted analyses could be due to the tendency for risk factors to cluster together. For example, mothers who experience a high degree of psychological distress may be more likely to abuse alcohol or smoke during pregnancy. In similar respects, highly reactive children may also be hyperactive or manifest significant conduct problems; in turn, their parents may respond to their behaviour more harshly or they may be more likely to have problems relating to other children. In such cases, it can be difficult to isolate the independent effect of each risk (or protective) factor, net of all the other characteristics or behaviours that may occur alongside them.

Alternatively, there is some evidence the effects of risk and protective factors may be cumulative, meaning that exposure to multiple risk factors has more influence on children's involvement in crime or delinquency than exposure to a single risk factor (Loeber & Farrington, 1998; Stouthamer-Loeber, Loeber, Wei, Farrington, & Wikström, 1998). This implies that the specific risk factors to which children are exposed are potentially less important than the *number* of risks they encounter in their lives. To the extent that this pattern holds for Australian children, it provides a clear basis for identifying those children at the greatest risk of early-onset crime or delinquency. Rather than focusing on any specific risk factor, it may be possible to identify children who are at risk of early-onset offending by counting the number of risk and protective factors present in their lives.

A similar approach makes use of the results of our adjusted statistical models to weight them by their relative importance. The advantage of this approach is that it seeks to emphasise those risk and protective factors that clearly differentiate early-onset offenders from non-offenders (at the expense of other factors that appear less relevant) at the same time as taking the potentially cumulative effects of multiple risk and protective factors into account. Using the latter approach, we sought to predict whether the children were at higher or lower risk of early-onset crime or delinquency, based on the 34 risk or protective factors included in the study.[7] Initially, we made two sets of predictions by identifying those children at higher or lower risk of early-onset crime or delinquency, based on their circumstances and characteristics in early (4–5 years) and late (10–11 years) childhood. We then replicated the analyses reported in the tables above using measures of the same risk and protective factors collected in the intervening years, when the children were aged 6–7 years (Wave 2) and 8–9 years (Wave 3). We then used those results to try to forecast which children were at higher and lower risk of early-onset crime or delinquency, based on their risk and protective factors in those years.

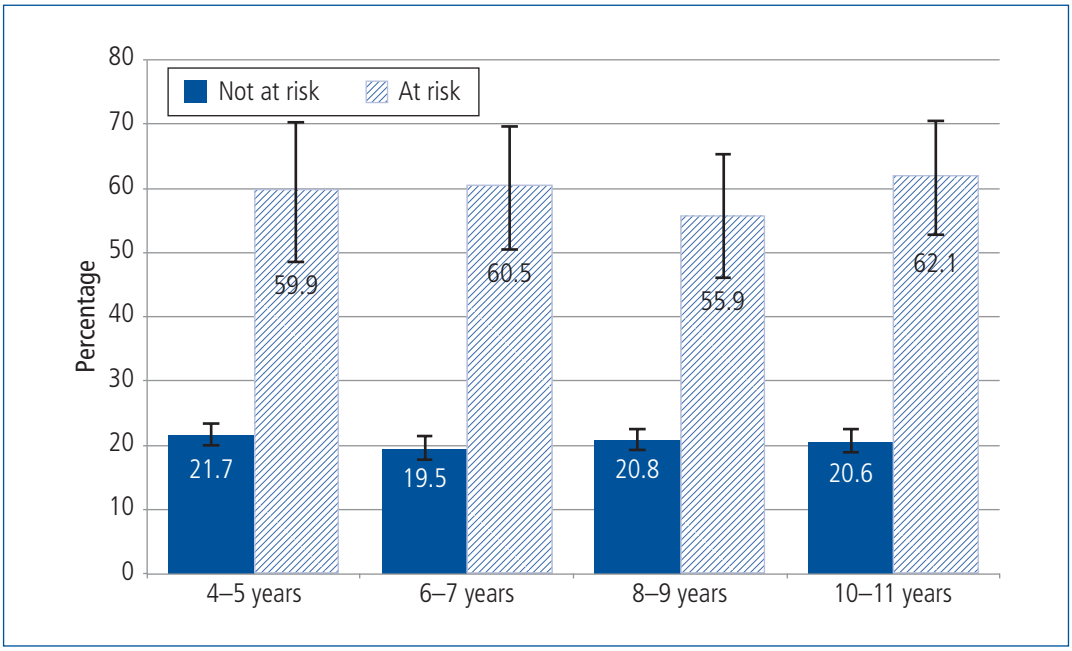
Figure 7.4 (on page 147) shows the percentage of children involved in crime or delinquency at age 12–13 by whether they were at higher or lower risk, based on statistical models of the risk or protective factors at 4–5, 6–7, 8–9 and 10–11 years. At each age, those children deemed to be at higher risk were significantly more likely to have engaged in crime or delinquency at 12–13 years. By contrast, only a small minority of children classified as being at lower risk of crime or delinquency reported committing any antisocial acts at 12–13 years. At 10–11 years, 62% of those who were deemed to be at higher risk went on to engage in crime or delinquency when they were 12–13 years, whereas 22% of those who were considered to be at lower risk, were engaging in crime or delinquency. This represents a three-fold increase in the risk of engaging in crime or delinquency. The pattern is remarkably consistent for the analyses of children at 4–5, 6–7 and 8–9 years, though the accuracy of the predictions seems greatest at 6–7 and 10–11 years.[8]

Considering the number and breadth of the variables examined, however, it is surprising that the analyses do not do a better job of predicting those who are at higher risk and those who are at lower risk. Although the majority of children thought to be at risk of early-onset crime or delinquency actually did engage in some form of antisocial behaviour, Figure 7.4 highlights some of the pitfalls of trying to predict children's involvement in crime or delinquency in advance. First,

[7] We used the results of the adjusted logistic regression analyses to estimate the predicted probability of early-onset crime or delinquency for each child. Then, children for whom the predicted probability exceeded 0.5 were classified as being at higher risk and those with predicted probabilities below 0.5 were assigned to the lower risk groups.

[8] As noted previously, the analyses used to estimate levels of risk were based on different-sized samples, depending on the ages at which the risk and protective factors were measured. As such, some of the differences observed between the predictive accuracy of these models could be due to slight differences in the composition of those estimation samples.

one in five children thought to be at lower risk had engaged in some form of crime or delinquency in late childhood and early adolescence. Second, two out of every five children deemed to be at higher risk managed to avoid early entry in criminal or delinquent behaviour. Despite the fact that our predictive model correctly identified the majority of early-onset delinquents, it over-predicted crime or delinquency at the same time as it failed to spot a number of early-starters.



Notes: The "I" bars represent 95% confidence intervals. "I" bars that do not overlap indicate there is a statistically significant difference between boys and girls. Sample sizes—4–5 years: *n* = 2,732; 6–7 years: *n* = 2,290; 8–9 years: *n* = 2,500; 10–11 years: *n* = 2,410.

Figure 7.4: Percentage of children engaged in crime or delinquency at 12–13 years, by whether they were at higher or lower risk at 4–5, 6–7, 8–9 and 10–11 years, K cohort

The implications of targeting programs and policies at higher risk groups need to be considered in this context. Two in five children who are at higher risk do not go on to engage in crime or delinquency at 12–13 years of age, whereas one in five children considered to be at lower risk start offending in early adolescence. Thus, targeting programs even based on a large array of risk factors may be an inefficient prevention strategy, even if those risk factors are relatively accurate predictors of subsequent involvement in crime.

The likely numbers of children at higher and lower risk, as well as the probable numbers that might report engaging in crime or delinquency, highlight that targeting based on the factors examined in our statistical models is not efficient. The LSAC K cohort is intended to represent approximately 250,000 Australian children born in 2003–04. Of them, as many as 13,600 could be considered to be at risk of crime or delinquency based on their circumstances in early childhood (i.e., 4–5 years). Yet, as the patterns above indicate, only about 8,100 of them might be expected to actually engage in crime or delinquency in early adolescence. The remaining 5,400 might commit offences at a later stage, but it seems more likely that programs aimed specifically at higher risk children will be redundant. At the same time, as many as 51,900 children are likely to engage in some form of crime or delinquency even though they may not be classified as being at risk. In other words, most children who report engaging in crime or delinquency in early adolescence are doing so with a low level of risk factors in early childhood.

These results highlight the dangers of overemphasising the child's temperament or early environmental conditions (e.g., harsh parenting) in explaining early-onset criminal or delinquent behaviour at the expense of other frequently overlooked aspects of children's lives, such as changes in the family, school, peer, or neighbourhood environment—not to mention, happenstance.

7.4 Conclusion

Despite the importance of preventing early-onset offending, surprisingly little research has examined its extent, its origins, or the factors that might protect against it among Australian children. In this chapter, we sought to address this gap in the literature by examining the prevalence of a range of criminal or delinquent behaviours among a representative sample of Australian children aged 12–13 years and the factors that might influence it. To our knowledge, this is the first nationally representative study of early-onset crime or delinquency to have been published in Australia and the first published Australian study of crime or delinquency among children born this century or around its turn.

The results confirm that early-onset crime or delinquency is relatively rare, with the majority of children evading any engagement in violent, property, or status offences. In fact, fewer than 10 per cent of boys and girls engaged in most of the criminal or delinquent behaviours examined. The exception, however, is fighting. Even though most children managed to avoid it, almost one in four boys admitted to getting into physical fights in public in the previous 12 months. Previous studies reported that crime or delinquency rises fairly rapidly in early adolescence and peaks in the late teenage years (Moffitt, 1993; Nagin, Farrington, & Moffitt, 1995). Therefore, the rates of children engaging in crime or delinquency might increase in the future as children get older.

In addition to describing the prevalence of early-onset crime or delinquency, we sought to identify risk and protective factors that were already in evidence in early childhood (4–5 years) and late childhood (10–11 years) and were associated with crime or delinquency at 12–13 years.[9] Of the 34 risk or protective factors examined, 25 were associated with early criminal or delinquent behaviour, although very few of these could differentiate on their own between delinquent children and non-offenders once all other characteristics were taken into account. The key factors that were independently related to differences in engagement in crime included several modifiable factors, namely having:

- a mother who consumed alcohol to a risky level (at 10–11 years);
- a mother who had been injured, been assaulted or experienced an illness (at 10–11 years);
- a mother who smoked during pregnancy;
- attention problems (at 4–5 years);
- higher levels of a sociable temperament style (at 4–5 years);
- significant peer problems (at 10–11 years); and
- experienced higher levels of harsh parenting (at 10–11 years).

Some independent factors related to criminal or delinquent behaviour were more fixed, however, and included:

- child gender (male);
- Indigenous status; and
- living in urban areas (at 4–5 years).

We then classified children into two groups based on the risk and protective factors present in their lives: those at higher and lower levels of risk of crime or delinquency at age 12–13. Irrespective of the age at which these risk factors were collected, we were fairly successful at distinguishing between those who were at higher compared to lower risk, based on their previous circumstances and characteristics. Three in five of those children thought to be at higher risk did actually engage in crime or delinquency at 12–13 years. By contrast, only one in five of the children considered to be at lower risk were involved in crime or delinquency. While this may reaffirm the sense that many of the markers of early-onset crime or delinquency can be identified early in the life course, two in five of those children deemed at risk in the primary school years were not engaging in crime or delinquency in early adolescence, and one in five children not considered to be at risk did engage in crime or delinquency. When translated into the numbers of children that LSAC is intended to represent, 8,100 of the 13,600 deemed at risk were engaged in crime or delinquency in early adolescence, whereas as many as 51,900 of the 236,400 children in the low-risk group were engaged in criminal or delinquent behaviour. Thus, the extent to which early-onset offenders

[9] It should be noted that far more risk than protective factors were included.

can be identified prospectively remains limited. Attempts to use early risk and protective factors to target early interventions therefore needs to acknowledge the fact that many seemingly high-risk children manage to avoid delinquency and that, as such, targeting resources on the basis of risk and protective factors might direct them away from other children in need. A public health approach to addressing crime or delinquency may therefore be a more productive approach to addressing this issue.

7.5 References

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