



Ministry
of Justice

Child outcomes after parental separation: variations by contact and court involvement

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1. Summary

This study was commissioned by the Ministry of Justice (MoJ) to contribute to an emerging body of research aiming to shed light on how parental separation might affect children's well-being. The aim of this report is to improve the evidence base on the extent to which parental separation is associated with children's outcomes, focusing on whether contact between a child and a non-resident parent post separation is associated with child well-being. The report also explores the extent to which courts are used to establish agreements on contact and finance arrangements during the separation process and the links with child outcomes. There has been limited research to date exploring these areas in a UK context. The report does not examine or identify the explanations for any differentials, but rather provides a descriptive portrait of UK families and, in particular, of a subset of these families who experienced separation. This descriptive information will provide evidence to inform social and justice policy in relation to parents who separate.

Guided by this overarching aim, this report analysed the UK Millennium Cohort Study (MCS), a longitudinal cohort study of around 19,000 children¹ who were born in the UK between September 2000 and January 2002. The analyses focus on children who at 9 months old were living with both parents, either married or cohabiting, and were successfully followed up until age 11 (sweep 5). Of this group, 6,668 children had complete information on all the variables used in the analyses, and 826 of these children experienced parental separation at some point between the ages of 9 months and 7 years. The analyses focused on separations that occurred up to age 7 (sweep 4) since this was the sweep of data collection which contained the most detailed level of information regarding frequency and quality of contact with the non-resident parent and information on court involvement.

The analyses in the report assess variations in outcomes measured at age 11 for this group of children of separated parents. Outcomes included in the analysis were: the child's subjective well-being; the child's engagement in antisocial behaviours (whether tried alcohol, smoked, been noisy in public places, stolen something from a shop, sprayed/written on buildings or damaged anything in a public space); the Strengths and Difficulties questionnaire (a measure of social-behavioural problems); and the Cambridge Gambling Task (an assessment of decision-making and risk-taking behaviour).

¹ The sample was selected from a random sample of electoral wards, using a stratified sampling strategy to ensure a sufficient number of observations from all four UK countries, and from disadvantaged and ethnically diverse areas (Hansen, 2012). The analysis undertaken for this report is weighted to adjust for this oversampling, and also to address any attrition across each sweep of data.

The key findings are summarised as follows:

- The frequency and quality of contact between the child and the non-resident parent:
 - declined with time since separation;
 - was higher for children whose parents were previously married;
 - was higher in families with higher socio-economic status; and
 - was higher among families who did not report court involvement (for contact or financial arrangements) during the separation process.
- Court involvement for financial arrangements appeared to be used more by more affluent families than less affluent families, while the reverse was true for court involvement for contact arrangements. The MCS study did not, however, collect information about whether court was used when the resident parent reported no contact or financial support from the non-resident parent.
- Consistent with the existing evidence base, children of continuously married parents tended to have the best outcomes at age 11, followed by children of parents who were cohabiting at the time of birth and remained together. Children of separated parents showed the worst outcomes.
- Among children of separated parents, the results suggest that more contact with the non-resident parent was associated with better outcomes for children at age 11.

The findings support existing evidence showing that children of separated parents have worse outcomes compared with children of parents who are still together. The findings also suggest that contact with the non-resident parent may mitigate against the negative effects of separation.

The MCS is the most robust survey currently available to assess the variations considered in this report. Nonetheless, and despite it having a large overall sample of around 19,000 children at sweep 1, the number of cases available to address these research questions was small, and the data available were limited. To explore these aims more thoroughly would require the development of an alternative source that addresses these limitations.

2. Context

This study was commissioned by the Ministry of Justice (MoJ) to improve the evidence base on the extent to which parental separation is associated with children's outcomes, focusing on whether contact between a child and a non-resident parent post separation is associated with child well-being. The study also explores the extent to which courts are used to establish agreements on contact and finance arrangements during the separation process and the links with child outcomes. A better understanding of the characteristics and needs of families that are unable to negotiate their own arrangements will be useful in informing policy development and practice around supporting families who separate.

Previous research has often focused on the characteristics of parents who separate, rather than the process of separation itself. The next section provides a summary of the existing body of work in this area

2.1 Background: an overview of existing research

As in most developed economies, the form and function of family life in the UK has undergone substantial changes over the past several decades (Amato, 2010). Prominent among those changes has been a rise in non-marital childbearing and increased relationship instability (Sigle-Rushton and McLanahan, 2004a). The implications of these changes for the well-being of children have attracted the interest of both academics and policymakers, and a large body of research has considered both their causes and consequences. Some issues, however, have been researched more than others (Amato, 2010).

There is a wealth of evidence showing that children of married parents tend to have better outcomes than children of unmarried parents, even those living with continuously cohabiting biological parents. This has been documented for a variety of outcomes and across different contexts including the UK (for reviews, see: Amato, 2000; Amato and Keith, 1991; McLanahan and Sandefur, 1994; McLanahan, Tach and Schneider, 2013; Kiernan and Mensah, 2010; Sigle-Rushton and McLanahan, 2004b). A large body of research has sought to identify how much of these differences are due to 'selection' – that is, the extent to which these disparities are explained by the characteristics of families in different types of family structure. Indeed, there is a strong evidence base (drawn from studies conducted in different countries, including the UK) which concludes that a large part of the differences in outcomes can be attributed to the characteristics of parents who remain married and those who are in different types of relationships and who may experience a separation (McLanahan, Tach and Schneider, 2013). Individuals in stable marriages, for example, tend to be better educated, to

have more stable employment patterns and better health behaviours (Crawford, Goodman and Greaves, 2013; Goodman and Greaves, 2010). These characteristics are positively associated with child outcomes (e.g. Goodman and Greaves, 2010) and therefore could, at least partially, explain why children of married parents tend to do better on average.

Less research has been undertaken to explore variability in children's adjustment after parental separation and to identify what factors appear to mediate or moderate the potentially negative effects of the separation process. A better understanding of these factors is important, not least because it could inform the development of effective policy interventions (Sigle-Rushton and McLanahan, 2004b). This report, in particular, investigates the potentially mediating role of contact with the non-resident parent following separation and of court involvement during the separation process.

There are very few studies on children's adjustment and the factors that moderate the negative effects of separation in Europe, including in the UK. The majority of what is known regarding the factors that produce variations in children's adjustment after separation comes from work conducted in the US (Amato and Gilbreth, 1999; Amato, Meyers and Emery, 2009; Bernardi *et al.*, 2013). The existing evidence base suggests that parental economic and time resources after separation – that is, parents' financial circumstances and the amount of time they spend with their children – are the main source of variation in children's subsequent adjustment.

Studies have produced mixed findings on the relationship between frequency of contact between the child and the non-resident parent and child outcomes, perhaps because frequency of contact may not always be a good indicator of relationship quality. Regarding economic resources, child support payments have received the most attention. Studies in the US, and one study in the UK have documented a positive association between child outcomes and child support payments (Aizer and McLanahan, 2006; Walker and Zhu, 2009; Meyer and Hu, 1999). Many scholars argue that child support payments and parental contact may be correlated across families, as contact opportunity may be traded with child support by both parents (Del Boca and Ribero, 1998; Ermisch, 2005) and, therefore, it is important to look at both variables together.

Furthermore, despite differences in child support systems between many states in the US and the UK, the courts have a more prominent role in regulating child support and contact in these countries than those in other European countries (Del Boca, 2003), and this may

shape the ways in which economic and time resources interplay in the adjustment processes for children after parental separation.

Overall, in the UK only a few studies have analysed the association between contact with non-resident parents and child outcomes (Trinder, Beek and Connolly, 2002; Bream and Buchanan, 2003; Trinder, Kellet and Swift, 2008; Kiernan, 2006; Flouri and Malmberg, 2012).² A smaller subset of these studies focus on court processes (Bream and Buchanan, 2003; Trinder, Beek and Connolly, 2002; Trinder, Kellet and Swift, 2008), using small samples of children with high parental conflict where the court has been involved in the contact arrangements. Other studies, by Kiernan (2006) and Flouri and Malmberg (2012), use the Millennium Cohort Study to analyse the association between non-resident fathers' involvement and child outcomes by using the first two sweeps (i.e. children aged 9 months and 3 years old) and a subset of parental separations experienced before age 3 of the cohort child. Neither those studies that examine non-resident parents' involvement, nor those that focus on these selected samples of children, found any association between children's adjustment after separation and the quantity of contact with the non-resident parent. Therefore there is a need for further work analysing large representative samples to examine how experiencing varying degrees of contact with non-resident parents, and court involvement in the separation process, is associated with children's well-being at later ages.

2.2 Policy context

In the UK, although the majority of separating parents make their own arrangements for contact with their children, a small group make these arrangements formally, either through mediation (where both parties attempt to resolve issues relating to their separation with the assistance of a professional family mediator) or through court. The UK government has, in recent years, increased its focus on the use of mediation to resolve private family law disputes, as part of an emphasis on diverting appropriate cases away from court towards self-made contact arrangements or mediation. For example, the Children and Families Act 2014 placed a statutory requirement on applicants in relevant family proceedings to first attend a Mediation Information and Assessment Meeting before making an application to court (unless an exemption applies). Moreover, the child maintenance system has changed

² The literature review was largely limited to peer-reviewed publications. It may be important, however, to note that there are a few related research reports in the UK. For example, Lader (2008), using the ONS Omnibus survey, describes the frequency and nature of contact with non-resident parents, and finds similar figures to the ones that are presented in this report using the MCS. Similarly, Poole *et al.* (2013) describe characteristics of non-resident fathers and Fehlberg *et al.* (2011) focus particularly on shared physical custody, yet neither of these studies explicitly relate contact and relationship quality with the non-resident parent to children's outcomes.

(following the introduction of the Child Maintenance Service and the gradual abolition of the Child Support Agency) and now fully incentivises parents to cooperate in the best interest of their children.

It is important to highlight, and consider while interpreting the results, that the data used in this report were collected before the recent policy developments were implemented. Following the policy changes discussed above, a larger share of families may use mediation and (possibly) a lower share of parents may use courts. Therefore, the profiles of families who experience court involvement described in the report are likely to differ from the profiles of families who have recently separated and resort to courts to settle financial or contact arrangements. Moreover, a system which incentivises parents to cooperate might influence the level and quality of post-separation contact between the child and the non-resident parent.

2.3 Overview of the research

This report uses the UK Millennium Cohort Study to describe variations in child outcomes according to the level of post-separation contact between the cohort child and the non-resident parent and whether separation issues were resolved with court involvement or not. In particular, the report has three key aims.

Aim 1 – To describe the way separated parents deal with separation, focusing on the nature and frequency of contact between the non-resident parent and the child. This aim also explores whether financial support was provided, and how this varied by the cohort child's age at separation, sex and pre-separation family characteristics.

Aim 2 – To describe how court use during the separation process varies by family characteristics.

Aim 3 – a) To document the size and extent of gaps in different child outcomes at age 11 by parents' marital status and whether they separated before sweep 4 (collected when children were around 7 years old) or were still together at sweep 5 (age 11) and **b)** to investigate whether post-separation contact with the non-resident parent and court involvement are associated with children's outcomes.

3. Approach

3.1 The Millennium Cohort Study

This report presents analyses of the Millennium Cohort Study (MCS), a UK longitudinal cohort study of around 19,000 children³ who were born in the UK between September 2000 and January 2002. The first sweep of data was collected when cohort children were around 9 months old, and subsequent sweeps of data were collected when children were around 3, 5, 7 and 11 years old. At each sweep, interviewers collected information about a range of factors including the family's demographic characteristics, socio-economic circumstances, different measures of child outcomes and development and parents' behaviours. Of particular relevance to this project, the MCS contains information on parents' relationship status at each sweep, and for children of separated parents it also contains information on the child's level of contact with the non-resident parent⁴ and the quality of the relationship between the two parents, as well as some information about court involvement during the separation process.

3.2 The analytical sample

Figure 3.1 illustrates the selection of the analytical sample. All the analyses presented in this report focus on children whose biological parents were either married or cohabiting at the time of birth and at sweep 1, collected when the cohort child was around 9 months old (around 80% of the total MCS sample).⁵ Multiple births were included in the sample and the analyses on children's outcomes included one observation (e.g. one of the twins) per family.

The majority of analyses in this report were carried out using the subsample of children who experienced a parental separation or divorce between 9 months (sweep 1) and age 7 (sweep 4), were successfully followed up at age 11 (sweep 5) and did not have missing values on any of the outcome and control variables that were used in the analyses. The final analytical sample corresponded to a sample of 826 children, 62% of separations which took place between sweep 1 and sweep 5. The sample was constructed so that pre-separation and post-separation circumstances could be observed before any assessment of child well-being, taking into account sample size and data availability (see Figure 3.1). Families that

³ The sample was selected from a random sample of electoral wards, using a stratified sampling strategy to ensure a sufficient number of observations from all four UK countries, and from disadvantaged and ethnically diverse areas (Hansen, 2012). The analysis undertaken for this report is weighted to adjust for this oversampling, and also to address any attrition across each sweep of data.

⁴ In the great majority of the cases, the non-resident parent was the father and the resident parent was the mother. At sweep 5 the number of female non-resident parents is 41 (5%).

⁵ The analyses excluded cases where one of the two parents died between birth and sweep 5 (age 11).

separated before the first interview (between birth and 9 months⁶) were excluded because there is no information on their pre-separation circumstances (which are necessary to address aims 1 and 2). Families that separated after sweep 4 were also excluded from the main analyses because sweep 4 contains the most measures of contact with the non-resident parent and information on court involvement was only collected for separations that occurred at or up to sweep 4. The widest set of outcome measures were collected in sweep 5, including some measures obtained by asking questions directly to the cohort child.

The analysis undertaken to document the size and extent of differences in child outcomes by parents' marital status (aim 3a) includes 5,842 children of parents who had not separated up to and including sweep 5 as well as children of parents who separated between sweep 1 and sweep 4. Both groups exclude all cases with missing values on parents' relationship status or any of the child outcome variables at sweep 5 that were used in the analyses.

Table 3.1 gives the number of children in each subgroup of the analytical sample. As Table 3.1 shows, the analytical samples of children of separated parents were relatively small – something to consider when interpreting the results as many of them will not be statistically significant at conventional levels. Nonetheless, it is substantively useful to consider results separately for groups depending on time since separation, since the negative effects of separation on child outcomes and the contact with the non-resident parent might vary as time since separation increases. Cohort children who did not experience parental separation before age 11⁷ were analysed separately depending on whether their parents were either married or cohabiting at the time of birth (in addressing aim 3a).

⁶ Parents' relationship status at the time of birth was asked retrospectively at sweep 1 (age 9 months).

⁷ Age 11 is the last available data collection point. Some children in this group may experience parental separation after age 11.

Figure 3.1 The timing and measurement of variables that guided the selection of the analytical sample

Focus on children of married/cohabiting parents at birth and sweep 1 (around 80% of total MCS sample)

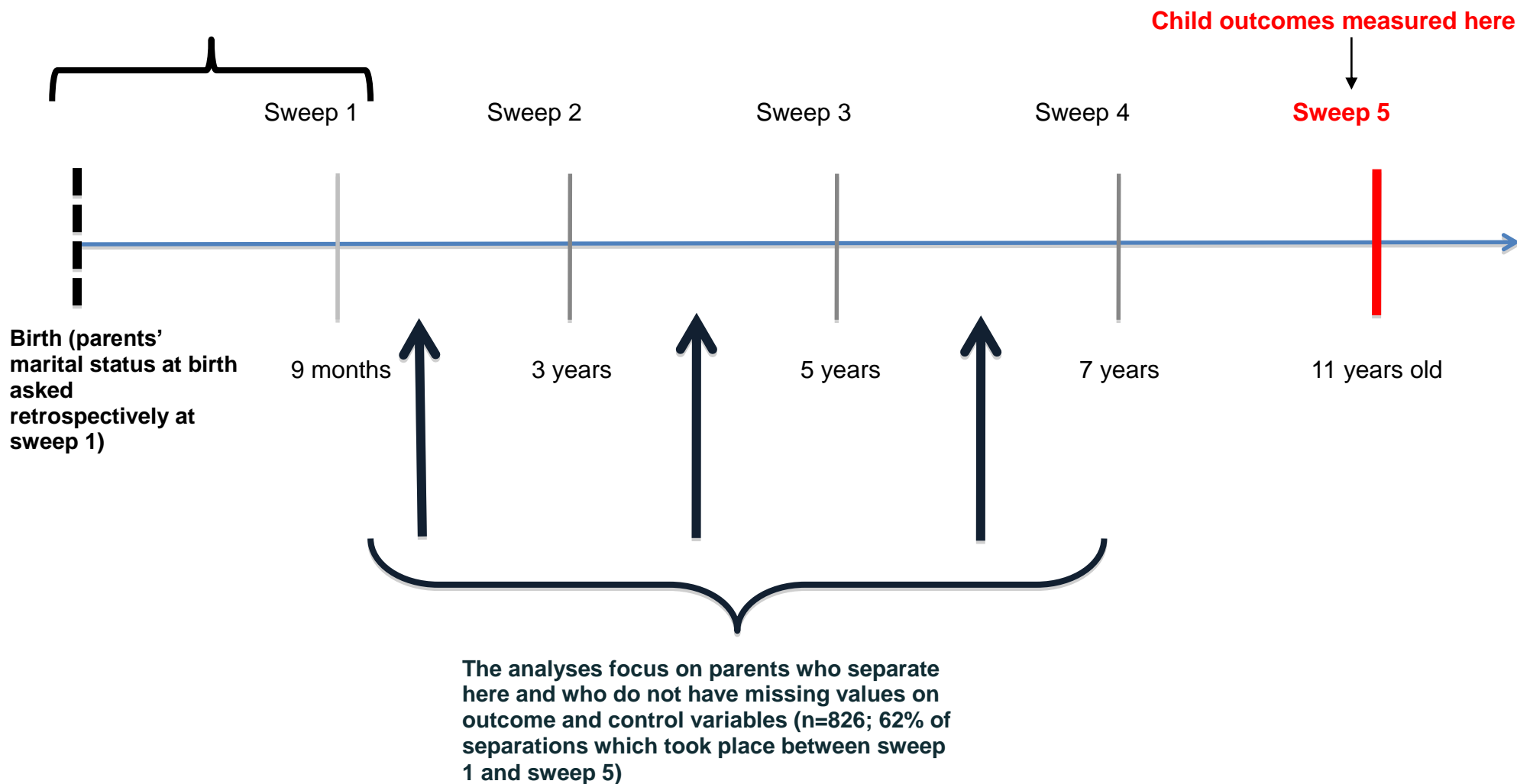


Table 3.1 Sample size of the analytical samples used in the analyses

Child experienced parental separation between sweep 1 and sweep 4	
Age at separation	N
9 months – 3 years	276
3 years – 5 years	286
5 years – 7 years	264
Total	826

Child did not experience parental separation (up to and including sweep 5)	
Parents' relationship status at the time of birth	N
Parents married at birth	4,624
Parents cohabiting at birth	1,218
Total	5,842

Source: Millennium Cohort Study. The number of observations was not weighted.

3.3 Variables

The variables used to conduct the analyses in this report can be grouped into four categories: 1) post-separation contact with the non-resident parent; 2) court involvement; 3) family characteristics; and 4) child outcomes. The variables are summarised in this section and described in more detail in Appendix A2.

The variables used are based on data collected through interviews with the main respondent, usually the cohort child's mother (around 96% of the cases). The information on the frequency and nature of contact between the cohort child and the non-resident parent may therefore be subject to bias. Previous studies have produced different estimates depending on whether the resident or the non-resident parents were providing information (Braver *et al.*, 1991).

Post-separation contact with the non-resident parent

Respondents were asked to provide information on various dimensions of contact with the non-resident parent, as detailed in Table 3.2. Some information was only available in particular sweeps.⁸ Throughout the report, when making general comments about these variables overall, the different dimensions of contact are referred to as 'contact' with the non-resident parent.

⁸ Information on contact with the non-resident parent was collected at sweep 1, but it is not reported in the table since the analyses excluded separations that occurred between birth and sweep 1.

Table 3.2 Variables on post-separation contact and court involvement by sweep of data collection

Nature and frequency of contact with the non-resident parent	Sweep 2 (age 3)	Sweep 3 (age 5)	Sweep 4 (age 7)*	Sweep 5 (age 11)
How often non-resident parent sees the cohort child	√	√	√	√
Non-resident parent is interested in the cohort child	√	√		
Non-resident parent is close to the cohort child			√	√
Cohort child stays overnight with non-resident parent		√	√	√
Non-resident parent lives within one hour distance from cohort child			√	
Cohort child talks weekly on the phone or via email to the non-resident parent			√	
Non-resident parent and resident parent have a good relationship	√	√	√	
Resident parent receives payments from the non-resident parent	√	√	√	√
Court involvement	Sweep 2 (age 3)	Sweep 3 (age 5)	Sweep 4 (age 7)	Sweep 5 (age 11)
Contact arrangements made by a court order		√	√	
Financial arrangements made by a court order		√	√	

Source: Millennium Cohort Study.

* Measures of contact with the non-resident parent at age 7 (sweep 4) were used to construct the summary indicator.

As shown in Appendix A1, questions on all the contact indicators, with the exception of financial support, were only asked when the resident parent first reported that the child has some contact with the non-resident parent. When no contact was reported, each of the indicators was assigned a value of zero.⁹

Summary measure of contact

To summarise all the available measures of contact with the non-resident parent, a summary score was constructed. The summary score takes the average of the seven contact

⁹ In the analytical subsample of children of separated parents, when the resident parent reports having received financial support from the non-resident parent, s/he is also very likely to report that the non-resident parent is in contact with the child. There were a total of 40 cases where the main respondent declared that the child was not in contact with the non-resident parent – in 14 of those cases, the main respondent reported some financial support from the non-resident parent.

indicators collected at age 7 (sweep 4).¹⁰ Throughout the report, the summary score is referred to as the 'summary measure of contact' with the non-resident parent.

Court involvement

The indicator for court involvement was constructed using information from age 7 (sweep 4), although information from sweep 3 was used when it was missing or unavailable from sweep 4.¹¹ The main respondent was asked whether contact and financial arrangements following separation were made via court orders. The use of court for contact arrangements question was asked when the main respondent reported some contact between the child and the non-resident parent.¹² Similarly, information on whether the court had been involved in the determination of financial arrangements was only collected when the resident parent reported that the non-resident parent was (at the time of interview) providing some financial support (regardless of whether the non-resident parent was in contact with the cohort child). These filters mean that some families that may have made use of the court during the separation process are not identifiable in the data. Moreover, the question on court involvement for financial arrangements was asked to a smaller pool of respondents. Due to this filtering, it is not possible to establish whether court involvement for financial arrangements was more or less prevalent than court involvement for contact arrangements.

Family characteristics

The analyses considered the following family characteristics observed before parental separation took place:¹³

- highest level of education of either parent at sweep 1 (no education/NVQ level 1/2, NVQ level 3, NVQ level 4/5¹⁴);
- highest level of social class based on occupational status of either parent at sweep 1 (professional social class vs not professional social class);

¹⁰ The decision to adopt a composite measure is supported by the fact that the Chronbach alpha reliability coefficient (which measures how strongly associated different items are) is .78 (i.e. above the desired .70 threshold). The Chronbach alpha reliability coefficient excluding distance – which might be considered conceptually different from the other measures of contact – is slightly lower and equal to 0.74.

¹¹ Sweep 4 provides the most up-to-date information on whether there was court involvement during the separation process. Around 40 observations draw on sweep 3 data.

¹² During the interview, the main respondent was asked how frequently the cohort child sees the non-resident parent and whether the cohort child stays overnight with the non-resident parent. After these two questions, the main respondent was asked whether these arrangements were made through a court order.

¹³ Ethnicity has not been considered due to small sample sizes.

¹⁴ This categorisation was based on a derived variable in the dataset which groups respondents according to National Vocational Qualifications (NVQ), which includes both academic and vocational qualifications. For respondents with both vocational and academic qualifications, NVQ level was assigned using the highest of these. NVQ level 1/2 corresponds to primary/secondary education or relevant vocational qualifications; NVQ level 3 corresponds to GCSE and A-levels or relevant vocational qualifications; NVQ level 4/5 corresponds to higher degree or relevant vocational qualifications. Respondents with no education did not have any of these qualifications.

- main respondent's age at the birth of the cohort child (<23, 23–29, 30+);
- when separation took place (i.e. in between which sweeps the parents separated, which provides an average estimate of the age of the cohort child at separation);
- cohort child's sex.

Other family characteristics, that are more likely to vary over time, were constructed using information provided in the sweep that most closely preceded the separation:

- household family income (quintiles);
- parents' relationship status (married vs cohabiting);
- whether the cohort child has siblings in the household (no sibling vs one or more);
- quality of the relationship between parents (higher quality vs lower quality¹⁵); and
- main respondent's work status (working vs not working).

The only post-separation variable that was included in the analyses was whether, at sweep 4 (age 7), the main respondent was living with a new partner. This was included as the presence of a step-parent could affect contact between the non-resident parent and the child.

Child outcomes

The analyses focused on a total of 14 outcomes for children, which were collected at sweep 5 (age 11). These variables measure overall adjustment, engagement in risky behaviours and a general sense of well-being.

The Strengths and Difficulties questionnaire (SDQ) is considered a highly validated measure of social-behavioural problems in community samples and a tool to screen psychiatric disorders amongst those aged 3–16 years old (Goodman, 1997). The main respondent was asked 25 questions. Answers were given on a three-point scale: 'not true', 'somewhat true', and 'certainly true'. Questions were grouped into five categories: 1) emotion symptoms, 2) conduct problems, 3) hyperactivity, 4) peer problems and 5) pro-social behaviour. The answers to the questions are assigned a set score depending on how positive or negative the answer is. These scores are summed up in a total score (the 'total difficulties score') ranging from 0 to 10; this is the outcome measure used throughout the analyses in the report. A higher score is indicative of more problems.

¹⁵ The main respondent was asked how happy s/he was in the current relationship – very happy to very unhappy on a scale from 1 to 7. Respondents who provided numbers from 5 to 7 were coded as 'higher quality'.

The Cambridge Gambling Task (CGT) comprises six tasks to assess decision making under uncertainty and risk-taking behaviour. The tasks were administered as a series of computer tests undertaken by the child (Atkinson, 2015). The six measures are:

- *Delay aversion*: a higher score is indicative of greater impulsivity.
- *Deliberation time*: a higher value is indicative of longer deliberation in a context where delay does not inform or improve the decision.¹⁶
- *Risk taking*: a higher value is indicative of greater risk taking.
- *Overall proportion bet*: a higher value is indicative of more risk taking.
- *Quality of decision making*: a higher score is indicative of a better quality of decisions.
- *Risk adjustment*: a higher score is indicative of better risk adjustment.

In adult populations, high scores on the CGT items are associated with antisocial behaviours, such as drug and alcohol use (Rogers *et al.*, 1999; Lawrence *et al.*, 2009), although there is no evidence base to suggest the same associations among a population of young adolescents.

The child's *subjective well-being* (SWB) was measured with a question that asked the cohort child to rate his/her life as a whole on a scale from 1 (completely happy) to 7 (completely unhappy).

Engagement in antisocial behaviours was measured through a series of questions asked to the cohort child through a self-completion questionnaire. Six binary indicators were created:

- cohort child has tried alcohol (more than a few sips);
- cohort child has tried smoking;
- cohort child has been noisy in public spaces;
- cohort child has stolen from a shop;
- cohort child has sprayed/written on buildings;
- cohort child has damaged anything in a public space.

Further information on the different measures of child outcomes is summarised in Appendix A, which presents the average values for each of these measures for the full MCS sample

¹⁶ Shorter deliberation time may indicate impulsive decision making, however in the Cambridge Gambling Task delay does not increase the available information for decision making with elapsed time (Atkinson, 2015).

and separately for the sample of children of separated and non-separated parents considered in this report. As these outcomes are measured on different scales, they were transformed to increase comparability of the associations explored. The Strengths and Difficulties, the risk taking and the subjective well-being scores were transformed into z-scores (also referred to as standard deviation units¹⁷). Following the transformation, each of these variables has mean 0 and standard deviation 1. For each of these measures, children with a value above the average have a z-score above 0 (i.e. a positive value on the measure), children who have an average value have a z-score close to 0 and children with a value below average have a z-score below 0 (i.e. a negative value on the measure).

3.4 Methods

Table 3.3 describes each of the three aims, the analytical sample used, the sweeps considered and variables used in the analyses. The statistical approaches are described in the table and alongside the results presented in Chapters 4, 5 and 6.

¹⁷ Z-scores are computed by subtracting the mean value from each individual's score and dividing it by the standard deviation.

Table 3.3 Analytical sample, sweeps considered and variables used for each aim

	AIM 1	AIM 2	AIM 3a	AIM 3b
Description	To describe the nature and frequency of contact between the non-resident parent and child and financial support provided, and how this varies by the cohort child's age at separation, sex and pre-separation family characteristics	To describe how court use during the separation process varies by family characteristics	To document the size and extent of gaps in different child outcomes by parents' marital status	To investigate whether post-separation contact with the non-resident parent and court involvement might make children who experience separation more or less vulnerable to its potentially negative effects
Analytical sample	Cohort children of separated parents	Cohort children of separated parents	Cohort children of separated and non-separated parents	Cohort children of separated parents
Sweeps used	Sweep 2 (age 3) Sweep 3 (age 5) Sweep 4 (age 7) Sweep 5 (age 11)	Sweep 3 (age 5) Sweep 4 (age 7)	Sweep 5 (age 11)	Sweep 4 (age 7) for contact with the non-resident parent Sweep 5 (age 11) for child outcomes
Variables used	Contact with the non-resident parent, court involvement, family and child characteristics	Court involvement, family and child characteristics	Child outcomes	Contact with the non-resident parent, child outcomes, selected family/child characteristics
Analytical approach used	Cross-tabulations Significances of associations were tested when looking at the summary measure of contact	Cross-tabulations	Cross-tabulations and regression analysis to test for statistical significance of differences	Regression analysis OLS models for continuous outcomes and logistic regression models for binary outcomes

4. Contact between children and non-resident parents

4.1 Aim

To describe the way parents deal with separation, analyses were undertaken focusing on the nature and frequency of contact between the non-resident parent and child, and whether financial support was provided, and how this varies by the cohort child's age at separation, sex and pre-separation family characteristics.

4.2 Description of sample used and methods

To address this aim, children who experienced a separation between the ages of 9 months (sweep 1) and 7 years (sweep 4) were selected and two separate sets of analyses were conducted.

The first set of analyses examined the range of different measures of contact available at each sweep by the cohort child's sex, parents' relationship status before separation and by the time since separation (see Table 4.1).

The second set of analyses used a summary measure of contact with the non-resident parent based on the average of seven contact indicators collected at age 7 (sweep 4), comparing this summary measure across the set of family characteristics described in section 3.3. Statistical tests¹⁸ were conducted to examine which of these differences were statistically significant, that is whether observed differences are not likely to be due to random variations in the samples that are compared (see Table 4.2).

4.3 Results

The results presented in Table 4.1 show differences in each contact variable at each sweep taking into account the cohort member's sex, her/his parents' relationship status before separation and the cohort member's approximate age around the time of separation.

Cohort child's sex

- There is no evidence that either boys or girls experience consistently more or higher quality contact with the non-resident parent.

¹⁸ The analyses were tested for statistical significance through an OLS regression model. The summary measure of contact was regressed on the different categories of each variable, then the joint significance of the coefficients was tested. The p-value from this test is reported in Table 4.2.

Parents' relationship status before separation

- Parents who were married prior to separation were less likely to have a good relationship with each other post separation than parents who were not married. For example at sweep 4, 50% of previously married resident parents reported a good relationship with the non-resident parent, compared with 54% of resident parents who were cohabiting before separation.
- Previously married resident parents were more likely to report that the non-resident parent was interested/close to the cohort child and that the cohort child stays overnight with the non-resident parent (e.g. at sweep 4, 71% of children whose parents were married were reported to stay overnight, compared with 65% of children whose parents were cohabiting before separation).
- Previously married parents were more likely to receive financial support from non-resident parents than never married parents (e.g. at sweep 4, 68% of parents who were married before separation compared with 59% of parents who were cohabiting before separation).
- Differences in the frequency of contact between the non-resident parent and the cohort child, between never and previously married parents, were small and not consistent across sweeps of data collection. At sweeps 2 and 4, children whose parents were married before separation were slightly more likely to be in weekly contact with the non-resident parent compared to children whose parents were cohabiting. The reverse was true at sweeps 3 and 5.

Time since separation

- There is no evidence that the time since separation was related to whether or not parents had a good relationship with each other post separation.
- Contact between the non-resident parent and the cohort child tended to decrease as time since separation increased, and the decline was particularly marked between sweeps 4 and 5. This stark decline between sweeps 4 and 5 is, however, almost entirely due to the way the sample is constructed.¹⁹
- Weekly contact with the non-resident parent tended to decline with time since the separation (regardless of the age of the child at separation). For example, for children who experienced parental separation at between 9 months (sweep 1)

¹⁹ Children whose parents separated between sweep 4 and sweep 5 are excluded from the analysis, and as contact declines with time since separation, this excludes those that are likely to have experienced the highest level of contact.

and age 3 (sweep 2), weekly contact declined from 65% at age 3 (sweep 2) to 51% at age 7 (sweep 4).

- There was no consistent pattern for whether resident parents received financial support from non-resident parents and the time since separation.

Summary measure of contact

Table 4.2 presents the results from the analyses exploring average (mean) differences in the summary score of contact between the child and the non-resident parent at sweep 4. The statistically significant differences across different groups of families are as follows:

- Contact with the non-resident parent tended to be higher in families with higher socio-economic status. The summary measure of contact appeared higher for children raised in households with higher levels of education, with either parent employed in a professional social class, with higher income, and where the main respondent was employed before separation.
- Contact was higher when the child was older at the time of separation. This is related to contact declining over time since separation.
- Contact tended to be lower for families who had experienced court involvement for settling contact or financial arrangements compared with families who did not experience court involvement.²⁰

There were other differences in the summary measure of contact levels at sweep 4 (age 7) as follows, although these were not statistically significant at conventional levels:²¹

- If parents were married before the time of separation, contact between the non-resident parent and the child tended to be higher than if parents had only ever cohabited.
- If the resident parent was older at the time of the cohort child's birth, contact tended to be higher.
- If parents had a better relationship before separation, contact with the non-resident parent tended to be higher at sweep 4.
- If the resident parent was in a new relationship at sweep 4, the level of contact with the non-resident parent was lower on average.

²⁰ See chapter 5 for a description of the court involvement variable.

²¹ Given the small sample size, the size of the coefficients suggest meaningful differences.

4.4 Summary of key findings

The analyses investigated how the nature and frequency of contact between the non-resident parent and child and the provision of financial support varied by the cohort child's age at separation, sex and pre-separation family characteristics. The results show that, at any sweep of data collection, there were only small differences in contact levels based on the cohort child's sex, while larger differences were found based on the parents' relationship status before the separation. For children whose parents were married before separation took place, their levels of contact with the non-resident parent tended to be higher on a number of contact measures. This is despite the quality of the relationship between the resident and the non-resident parent post separation tending to be worse if they were married as opposed to cohabiting before separation. The non-resident parent was also more likely to provide financial support following separation if parents were married (rather than cohabiting) before separation took place. The level of contact between the child and the non-resident parent tended to decline as the time since separation increased.

Contact with the non-resident parent at age 7 (sweep 4), as measured by the summary variable, varied across different groups of families. In particular, contact with the non-resident parent tended to be associated with parents' higher socio-economic status. Measures of contact were also related to reports of court involvement: contact between the child and the non-resident parent tended to be lower for families who had experienced court involvement compared with families who did not experience court involvement.

Table 4.1: Contact with the non-resident parent (NRP) by cohort child sex, age at separation and parents' relationship status before separation

Percentage who say YES/scored 1 on these variables	Reported by the resident parent								Number of observations	Total number of observations
	NRP has at least weekly contact with child	NRP is interested in child	NRP is close to child	Child stays overnight with NRP	NRP talks on phone/ email to child at least once a week	NRP is within one hour away from child	Good relationship between resident parent and NRP	Resident parent receives payments from NRP		
Sweep 2 (age 3)										
Child is boy	61	79	-	-	-	-	45	62	137	276 (separations between 9m and 3y)
Child is girl	70	73	-	-	-	-	46	60	139	
Cohabiting before separation	64	75	-	-	-	-	51	58	156	
Married before separation	66	78	-	-	-	-	37	66	120	
Average	65	76	-	-	-	-	45	61	276	
Sweep 3 (age 5)										
Child is boy	67	84	-	68	-	-	55	60	266	545 (separations between 9m and 3y & 3y and 5y)
Child is girl	62	81	-	65	-	-	53	62	279	
Cohabiting before separation	67	80	-	59	-	-	56	57	270	
Married before separation	62	85	-	73	-	-	52	66	275	
Child age at separation: 9 months – 3 years	58	76	-	65	-	-	52	61	259	
Child age at separation: 3 years – 5 years	70	89	-	68	-	-	56	62	286	
Average	64	83	-	67	-	-	54	61	545	

Percentage who say YES	NRP has at least weekly contact with child	NRP is interested in child	NRP is close to child	Child stays overnight with NRP	NRP talks on phone/ email to child at least once a week	NRP is within one hour away from child	Good relationship between resident parent and NRP	Resident parent receives payments from NRP	Number of observations	Total number of observations
Sweep 4 (age 7)										
Child is boy	62	-	50	70	53	76	50	61	410	826 (separations between 9m-3y & 3y-5y & 5y-7y)
Child is girl	61	-	54	68	49	76	53	69	416	
Cohabiting before separation	59	-	51	65	47	74	54	59	309	
Married before separation	63	-	53	71	53	77	50	68	517	
Child age at separation: 9 months – 3 years	51	-	40	69	39	70	53	60	276	
Child age at separation: 3 years – 5 years	58	-	57	71	51	73	51	65	286	
Child age at separation: 5 years – 7 years	77	-	61	66	65	86	50	70	264	
Average	61	-	52	69	51	76	52	65	826	
Sweep 5* (age 11)										
Child is boy	52	-	44	63	-	-	-	63	401	800 (separations between 9m and 3y & 3y and 5y & 5y and 7y)
Child is girl	50	-	49	59	-	-	-	63	399	
Cohabiting before separation	53	-	44	55	-	-	-	59	303	
Married before separation	51	-	48	65	-	-	-	66	497	
Child age at separation: 9 months – 3 years	45	-	40	53	-	-	-	63	271	
Child age at separation: 3 years – 5 years	50	-	46	60	-	-	-	62	284	
Child age at separation: 5 years – 7 years	60	-	55	72	-	-	-	64	245	
Average	51	-	46	61	-	-	-	63	800	

Source: Millennium Cohort Study.

* For those children who experience a parental separation up to sweep 4 and who don't have a missing value on contact with the non-resident parent at sweep 5. The number of observations is lower at sweep 5 (800) than at sweep 4 (826) since a few cases have missing values on contact with the non-resident parent at sweep 5. Note: the estimates were obtained using survey weights in order to account for the complex survey design of the Millennium Cohort Study. The number of observations reported was not weighted.

Table 4.2: Summary measure of contact with the non-resident parent (NRP) at age 7 (sweep 4) based on family characteristics

	Summary measure of contact measure with NRP at sweep 4 (age 7)			Significant differences	N
	Mean	Lower 95% CI	Upper 95% CI		
Child age at separation				*** p<0.01, ** p<0.05, * p<0.1	
Child age at separation: 9 months – 3 years	0.55	0.51	0.58	***	276
Child age at separation: 3 years – 5 years	0.61	0.57	0.65		286
Child age at separation: 5 years – 7 years	0.68	0.65	0.71		264
Child sex					
Boy	0.60	0.57	0.63	not significant	410
Girl	0.61	0.58	0.65		416
Highest level of education in the household at sweep 1					
None, NVQ level 1/2, overseas	0.58	0.54	0.61	***	322
NVQ level 3	0.58	0.53	0.63		191
NVQ level 4/5	0.66	0.63	0.70		313
Household social class at sweep 1					
Lower than professional social class	0.58	0.55	0.62	***	496
Professional social class	0.65	0.61	0.68		330
Main respondent age at child's birth					
<20	0.61	0.50	0.71	**	54
20–29	0.58	0.55	0.61		443
30+	0.65	0.62	0.68		329
Pre-separation household income					
Bottom	0.55	0.50	0.60	***	212
Second quintile	0.59	0.55	0.64		228
Third quintile	0.65	0.61	0.69		184
Fourth quintile	0.66	0.61	0.72		112
Top	0.66	0.61	0.72		90

Pre-separation relationship status between parents					
Cohabiting	0.59	0.55	0.62	not significant	309
Married	0.62	0.59	0.65		517
Pre-separation relationship quality between parents					
Worse quality	0.60	0.57	0.63	not significant	499
Better quality	0.62	0.59	0.66		327
Main respondent work status before separation					
MAIN did not work	0.58	0.53	0.62	**	318
MAIN worked	0.63	0.60	0.66		508
Child has siblings before separation					
No sibling	0.63	0.59	0.67	not significant	225
Any sibling	0.60	0.57	0.63		601
Main respondent in a new relationship at sweep 4					
No	0.61	0.59	0.64	not significant	747
Yes	0.56	0.50	0.63		79
Summary measure of court involvement					
Not in contact with the non-resident parent	0.04	0.02	0.06	***	40
In contact with the non-resident parent without court involvement	0.65	0.63	0.67		683
In contact and with court involvement	0.57	0.52	0.62		103
Average/Total N	0.61	0.58	0.63		826

Source: Millennium Cohort study.

Note: the estimates were obtained using survey weights to account for the complex structure of the MCS.

The summary score draws on all seven measures of contact with the non-resident parent at sweep 4 (age 7), which were reported by the resident parent. The number of observations was not weighted. The summary measure takes values between 0 and 1. For a full description of the variables included see Table 3.2.

The significance was tested by running an OLS model, regressing the summary measure of contact on each of the categories for each variable – then the joint significance of the coefficients was tested. Pre-separation means the sweep before separation took place.

5. Use of court during separation

5.1 Aim

To describe how court use during the separation process varies by family characteristics.

5.2 Description of sample and methods

The analyses examined the use of court for making contact and financial arrangements and how this varied by family characteristics. To address this aim the analyses focused on children who experienced a separation when aged between 9 months (sweep 1) and 7 years (sweep 4). Three measures of court involvement were created from the questions asked in the survey.

The first measure relates to whether court was used to determine **contact arrangements**.

The following three categories were created:

- the non-resident parent was not in contact with the child;
- there was contact but no report of court involvement for contact arrangements;
- there was both contact and court involvement for contact arrangements.

The second measure relates to whether court was used to determine **financial arrangements**. The following three categories were created:

- there was no financial support from the non-resident parent;
- there was financial support without court involvement for financial arrangements;
- there was financial support and court involvement for financial arrangements.

A summary measure of court involvement was created by combining information on court involvement for financial and contact arrangements. This summary measure has three categories of families:

- the non-resident parent was not in contact with the child;²²
- there was contact but no court involvement was reported;
- there was both contact and some kind of court involvement (for either contact or financial arrangements or both).

²² This group includes 14 cases where the main respondent declared that the non-resident parent was not in contact with the child but did provide some financial support (not arranged with court involvement).

The results presented here are likely to underestimate the overall extent to which courts are involved in settling contact or financial arrangements. This is because the MCS questions on use of court for contact were only asked if there was contact between the non-resident parent and child, and questions on financial arrangements were only asked if the non-resident parent was providing financial support. It is possible that parents had used court previously but there was no contact/financial arrangement in place at the time of the interview. Overall, 103 respondents (in the analytical sample used) reported court involvement. Given this small sample, it is not possible to undertake detailed analyses of families who used court.

5.3 Results

The results presented in Table 5.1 show that:

- Overall, reports of court involvement were more prevalent among parents who were married before separation, and who had a lower quality relationship before separation.
- Differences in court use by family characteristics were more pronounced for financial than for contact arrangements.
- Court involvement for financial arrangements was more prevalent among families with higher socio-economic status, with higher levels of education, with higher income, with either parent of the household belonging to a professional social class and where the main respondent was working before separation.
- When looking at court involvement for contact arrangements, there was no consistent pattern other than it was more prevalent among older parents and in families with more than one child.

The results shown in Table 5.2, which combine information on court use for financial and contact arrangements, provide a similar picture and show that overall more affluent families were more likely to use courts than less affluent families. It is important to highlight that these patterns may be influenced by the way the court involvement questions were asked in the MCS questionnaire (see above) given that some family types were less likely to report contact and financial support than other family types. For example, among less affluent families the child is less likely to be in contact with the non-resident parent and the non-resident parent is less likely to provide financial support, than in more affluent families.

5.4 Summary of key findings

Differences in family characteristics for court use seem more pronounced for financial than for contact arrangements. More affluent families appeared to be more likely to use courts for financial arrangements than less affluent families. Overall, relatively affluent families were more likely to report some form of court involvement than less affluent families.

There could be different reasons explaining these patterns. For example, more affluent families might be more likely to experience court involvement for financial arrangements as they might have more assets to divide and court involvement could be used to formalise separation of financial assets.

Table 5.1: Characteristics of parents who go through courts for contact or financial arrangements and by post-separation frequency and quality of contact with non-resident parent (NRP) at age 7 (sweep 4)

<i>Percentages</i>	Contact and court involvement on contact arrangements at age 7 (sweep 4)			Financial support from NRP and court involvement on financial arrangements at age 7 (sweep 4)			Total number
	No contact with the non-resident parent at sweep 4 (n=40)	Contact with the non-resident parent without court involvement on contact arrangements (n=711)	Contact with the non-resident parent with court involvement on contact arrangements (n=75)	No financial support from NRP at sweep 4 (age 7) (n=297)	Financial support from the NRP without court involvement on financial arrangements (n=488)	Financial support from the NRP and court involvement on financial arrangements (n=41)	
Child age at separation							
Child age at separation: 9 months – 3 years	8	81	11	40	55	5	276
Child age at separation: 3 years – 5 years	6	85	9	35	61	4	286
Child age at separation: 5 years – 7 years	0	91	9	30	63	7	264
Child sex							
Boy	6	85	9	39	57	4	410
Girl	4	86	10	31	62	7	416
Highest level of education in the household at sweep 1							
None, NVQ level 1/2, overseas	5	85	10	44	52	4	322
NVQ level 3	9	82	9	38	60	2	191
NVQ level 4/5	3	88	9	23	69	9	313

	No contact with the non-resident parent at sweep 4 (n=40)	Contact with the non-resident parent without court involvement on contact arrangements (n=711)	Contact with the non-resident parent with court involvement on contact arrangements (n=75)	No financial support from NRP at sweep 4 (age 7) (n=297)	Financial support from the NRP without court involvement on financial arrangements (n=488)	Financial support from the NRP and court involvement on financial arrangements (n=41)	Total number
Household social class at sweep 1							
Lower than professional social class	7	83	10	39	58	3	496
Professional social class	2	89	9	29	63	9	330
Main respondent age at child's birth							
<20	9	86	5	43	54	3	54
20–29	6	83	11	35	61	5	443
30+	3	89	8	34	59	7	329
Pre-separation household income							
Bottom	7	85	8	46	52	2	212
Second quintile	7	82	11	36	61	3	228
Third quintile	5	83	12	30	62	8	184
Fourth quintile	2	91	7	29	61	11	112
Top	1	92	7	22	70	9	90
Pre-separation relationship status between parents							
Cohabiting	7	84	8	41	58	1	309
Married	4	86	10	32	60	8	517

	No contact with the non-resident parent at sweep 4 (n=40)	Contact with the non-resident parent without court involvement on contact arrangements (n=711)	Contact with the non-resident parent with court involvement on contact arrangements (n=75)	No financial support from NRP at sweep 4 (age 7) (n=297)	Financial support from the NRP without court involvement on financial arrangements (n=488)	Financial support from the NRP and court involvement on financial arrangements (n=41)	Total number
Pre-separation relationship quality between parents							
Worse quality	5	84	10	37	56	7	499
Better quality	5	87	8	33	64	3	327
Main respondent work status before separation							
MAIN did not work	8	84	8	39	56	5	318
MAIN worked	3	87	10	33	62	6	508
Child has siblings before separation							
No sibling	4	90	6	28	65	6	225
Any siblings	6	84	10	38	57	5	601
Average	5	85	9	35	59	5	826

Source: Millennium Cohort Study.

* For cases where the resident parent is not in contact with the non-resident parent, information on whether there was court involvement is not available. Note: the estimates were obtained using survey weights to account for the complex structure of the MCS. Pre-separation means the sweep before separation took place. The number of observations was not weighted.

Table 5.2: Characteristics of parents who go through courts and by post-separation frequency and quality of contact with non-resident parent (NRP) at age seven (sweep 4)

<i>Percentages</i>	Summary measure of court involvement at age 7 (sweep 4)			Total number
	No contact with the non-resident parent at sweep 4 (age 7) (n=40)	Contact with the non-resident parent without court involvement (n=683)	Contact with the non-resident parent with court involvement (n=103)	
Child age at separation				
Child age at separation: 9 months – 3 years	8	77	14	276
Child age at separation: 3 years – 5 years	6	82	11	286
Child age at separation: 5 years – 7 years	0	87	13	264
Child sex				
Boy	6	81	12	410
Girl	4	82	14	416
Highest level of education in the household at sweep 1				
None, NVQ level 1/2, overseas	5	82	13	322
NVQ level 3	9	80	11	191
NVQ level 4/5	3	83	14	313
Household social class at sweep 1				
Lower than professional social class	7	81	12	496
Professional social class	2	83	15	330
Main respondent age at child's birth				
<20	9	83	8	54
20–29	6	80	14	443
30+	3	85	12	329
Pre-separation household income				
Bottom	7	84	9	212
Second quintile	7	81	13	228
Third quintile	5	78	17	184
Fourth quintile	2	85	14	112
Top	1	85	15	90

	No contact with the non-resident parent at sweep 4 (age 7) (n=40)	Contact with the non-resident parent without court involvement (n=683)	Contact with the non-resident parent with court involvement (n=103)	Total number
Pre-separation relationship status between parents				
Cohabiting	7	84	9	309
Married	4	81	15	517
Pre-separation relationship quality between parents				
Worse quality	5	80	15	499
Better quality	5	85	10	327
Main respondent work status before separation				
MAIN did not work	8	80	12	318
MAIN worked	3	83	14	508
Child has siblings before separation				
No sibling	4	85	11	225
Any Siblings	6	81	13	601
Average/Total N	5	82	13	826

Source: Millennium Cohort Study.

* For cases where the resident parent is not in contact with the non-resident parent, information on whether there was court involvement is not available. Note: the estimates were obtained using survey weights to account for the complex structure of the MCS. The number of observations was not weighted. Pre-separation means the sweep before separation took place.

6. Child outcomes

6.1 Aim

Analyses were undertaken to explore the size and extent of differences in various child outcome measures at age 11 for children of married, cohabiting and separated parents. The aim of section 6.2 is to examine whether, consistent with existing evidence, children of separated parents tend to have worse outcomes than those of parents who are still together. The aim of section 6.3 is to explore whether, for children of separated parents, the level of contact with the non-resident parent and the involvement of court are related to outcomes.

6.2 Child outcomes by parents' marital status

Description of sample and methods

To examine whether the parental marital status is associated with child outcomes at age 11 (sweep 5), the child outcome measures were compared across three groups of children:

- those born to married parents who remained together at least until sweep 5;²³
- those born to cohabiting parents who remained together at least until sweep 5; and
- those born to a couple who separated sometime between sweep 1 and sweep 4; for children whose parents separated, the outcomes were analysed separately by cohort children's age at separation.

The outcome measures included a measure of social-behavioural problems (the Strengths and Difficulties questionnaire (SDQ)), decision making under uncertainty and risk-taking behaviour (Cambridge Gambling Task (CGT)), subjective well-being (SWB) and participation in a range of antisocial behaviours. See section 3.3 for more details.

Appendix Table B1 provides the descriptive statistics (mean z-scores or percentages) for each group of children for each outcome measure.

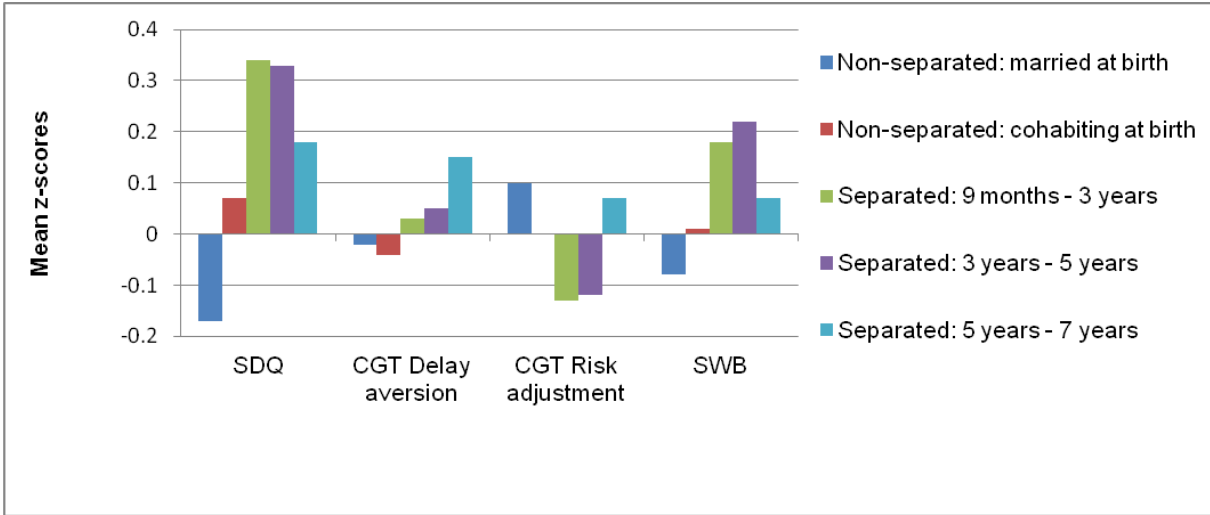
²³ Sweep 5 (age 11) is the last available data collection point. Some children in this group may experience parental separation after age 11.

Regression techniques were then used to assess whether differences in outcomes for the three groups of children were statistically significant.²⁴ The full regression results are presented in Appendix Tables B2 and B3. Since the aim is to describe the size of differences in child outcomes by parents' marital status, and not to explore the extent to which these differences are explained by family characteristics, the analyses do not adjust for family characteristics. As such, the analyses document but do not explain observed differences.

Results

Figures 6.1 and 6.2 show the average values of the subset of outcome measures that were associated with parental separation with at least a 10% level of significance.²⁵ The differences by parents' marital status are more marked for some outcomes than others.

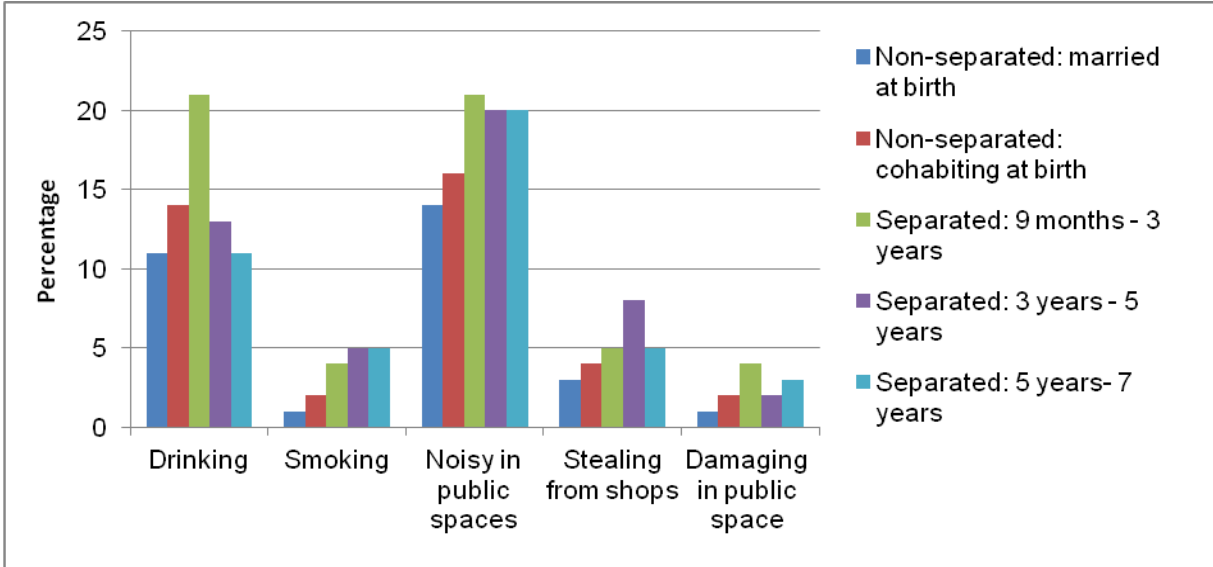
Figure 6.1 Child outcome measures (SDQ, CGT and SWB) by family type



Note: SDQ (Strengths and Difficulties questionnaire), measure of social behavioural problems. CGT (Cambridge Gambling Task), measure of decision making in uncertainty. SWB (Subjective well-being), measure of subjective well-being. A higher z-score indicates a more negative outcome for SDQ and SWB; a higher score is indicative of greater impulsivity for CGT Delay aversion; a lower score indicates a more negative outcome for CGT Risk adjustment.

²⁴ Each outcome was regressed on a variable categorising children as being born to married parents (the reference category), to cohabiting parents or to parents who separated (the latter were divided into three categories based on the age of the cohort child when separation was experienced). Ordinary Least Square regression techniques were used for scale variables and logistic regression techniques were used for binary variables.
²⁵ See Appendix Table B1 for the average values. Details about which specific coefficients are statistically significant and at what level are shown in Appendix Tables B2 and B3.

Figure 6.2 Child outcome measures (antisocial behaviours) by family type



Note: This graph shows the percentage of cohort children who self-reported having: tried alcohol; tried smoking; been noisy in a public space; stolen from a shop; or damaged things in a public space.

The results presented in Figures 6.1 and 6.2 indicate that children of parents who were married at the child’s birth and remained together showed the best outcomes at age 11, followed by children of parents who were cohabiting at the time of birth, and stayed together. Children of separated parents showed the worst outcomes.²⁶ This pattern is in line with previous research (see for example Kiernan, 1992).

A consistent picture did not emerge when looking at child outcomes based on the child’s age at separation. There was little evidence that age at separation was associated with child outcomes, although children who experienced a separation at the youngest ages (between 9 months and 3 years old) were significantly more likely than other separated children to have tried alcohol. For almost all of the other outcome measures, differences by age at separation were not statistically significant. It is important, however, to highlight that this may be due to the small sample size of these groups.

²⁶ For the majority of the outcomes, the results suggest that children born to continuously cohabiting parents tend to have better outcomes than children whose parents separated. However, differences were less marked (both in size and statistical significance) than those obtained when comparing children of continuously married parents to children of separated parents.

Summary of key findings

In line with previous research (for example Crawford, Goodman and Greaves, 2013), this analysis of the MCS has found that children of separated parents tend to have worse outcomes than children of continuously married or cohabiting parents. Although the analyses of this report have not attempted to explain the reasons behind these differentials, previous research has indicated that selection effects largely account for this. That is, there are underlying differences between those who separate compared with those who remain together which tend to be related to outcomes, for example in their socio-economic characteristics.

6.3 Child outcomes by contact and court use

This section explores whether outcomes of children whose parents have separated vary by separation factors – specifically post-separation contact with the non-resident parent and court involvement.

Description of sample and methods used

The analyses used regression models²⁷ and focused on children who experienced a parental separation between the age of 9 months (sweep 1) and 7 years (sweep 4). The first set of models regressed each of the outcome measures (measured at sweep 5) against the summary measure of contact at sweep 4.²⁸ The second set regressed the outcome measures against the summary measure of court involvement at sweep 4.

Both sets of models were first run including a control for the cohort child's gender only (as engagement in antisocial behaviours and adjustment post parental separation may differ for boys and girls). They were then run with additional controls on parents' relationship status before separation (married vs cohabiting)²⁹ and for the cohort child's age at separation³⁰ as previous analyses in this report have revealed that these factors tend to be associated with

²⁷ Regression analysis is used to understand how the typical value of the dependent variable (e.g. child outcomes) varies when one of the independent variables varies (e.g. the summary measure of contact with the non-resident parent or the summary indicator of court involvement), while the other independent variables remain constant. Continuous outcomes (i.e. the Strengths and Difficulties questionnaire score, the six items from the CGT and subjective well-being) were analysed using Ordinary Least Squares (OLS) regression, while binary outcomes (i.e. engagement in antisocial behaviours) were analysed using logistic regression.

²⁸ See section 3.3 for a description of the variables.

²⁹ Although the analyses focused on a selected subsample of separated families, relationship status before separation could still reflect family socio-economic circumstances. Nonetheless, running the second regression model without adjustment for relationship status before separation does not alter the results.

³⁰ Since Table 4.2 showed that families who had experienced court involvement reported lower average levels of contact with the non-resident parent at sweep 4, additional models were run by interacting these two variables. Since the results did not reveal any significant interaction between court involvement and contact with the non-resident parent at sweep 4, these analyses are not presented in the report.

the level of contact and with court involvement. The models do not adjust for pre-separation family characteristics as the aim is to investigate the associations between the separation process and child outcomes, not to establish the cause of any differences.

Results

The full results of the regression models are presented in Appendix C – Tables C1 and C2 show the models exploring the association between contact and the outcome measures; Tables C3 and C4 show the models for court use and outcomes.

There were some statistically significant associations which showed that more contact with the non-resident parent was associated with better outcomes on some measures. The results also suggested that children in families who experienced court involvement during the separation process tended to have worse outcomes on some measures, although most associations were not statistically significant. The key findings are given below.

Contact and child outcomes

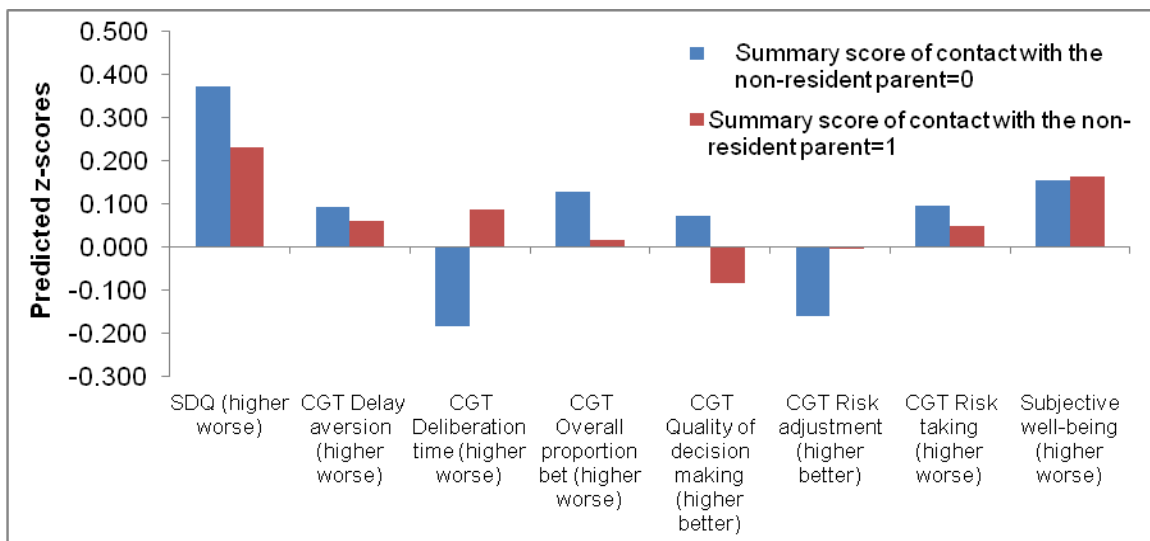
- More contact with the non-resident parent was significantly associated with lower odds of the cohort child smoking and damaging things in public spaces (at the 10% and 5% level, respectively).
- The other outcome measure showing a significant association with contact was one of the CGT measures – deliberation time. A higher level of contact with the non-resident parent was associated with longer deliberation time in the task. It is unclear, however, how this finding should be interpreted in a population of young adolescents as the CGT measure has rarely been used in studies of this age group. Shorter deliberation time may suggest impulsivity, although in the context of the CGT delay does not increase the available information for decision making.³¹
- The results also indicate, although not to a significant extent, that more contact with the non-resident parent was associated with lower predicted probabilities of being noisy in public spaces, stealing from a shop and writing on buildings. On the other hand, more contact with the non-resident parent was also associated with a higher predicted probability of the cohort child drinking alcohol.
- Overall the results showed that girls had statistically significantly more positive outcomes than boys on some measures.

³¹ Previous studies have shown that long-term alcohol consumption is associated with longer deliberation time (Lawrence *et al.*, 2009), however these have covered adults only.

- The models that controlled for parents' relationship status before separation and the cohort child's age at the time of separation found that relationship status was not statistically significantly associated with any of the outcome measures, although the child's age at time of separation was associated with some of the antisocial behaviour measures. For example, experiencing parental separation at between 9 months (sweep 1) and 3 years old (sweep 2) resulted in lower odds of damaging things in public places and writing on buildings compared with children whose parents had separated when they were older.

Figures 6.3 and 6.4 illustrate the predicted values for all the outcome measures based on the contact regression models which included all the controls (see Appendix Tables C1 and C2). The predicted values are obtained by setting the summary measure of contact at either maximum or minimum values (1 or 0) and the rest of the coefficients at their mean values.

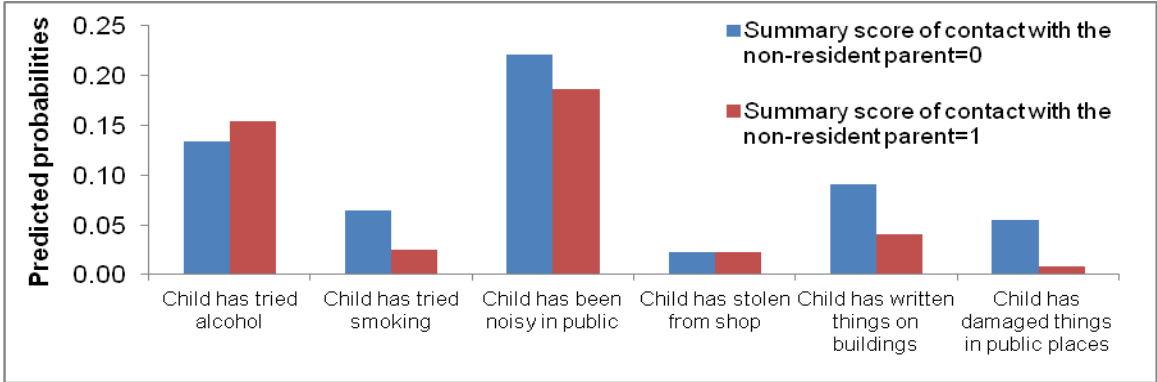
Figure 6.3 Predicted z-scores for child outcomes measured at age 11 (sweep 5) by contact with the non-resident parent at sweep 4



Note: Predicted values at minimum (0) and maximum (1) levels of the summary measure of contact with the non-resident parent (n=826) Full model results are shown in Appendix Table C1 Model (1). CGT Deliberation time showed a statistically significant coefficient (at the 5% level), while differences for the rest of the outcomes were not statistically significant at conventional levels.

'Higher worse' means that a positive regression coefficient indicates lower levels of well-being on that particular outcome, while 'higher better' means that a positive regression coefficient indicates higher levels of well-being.

Figure 6.4 Predicted probabilities for child engagement in antisocial behaviours measured at age 11 (sweep 5) by contact with the non-resident parent at sweep 4



Note: Predicted probabilities at minimum (0) and maximum (1) levels of the summary measure of contact with the non-resident parent (n=826). Full model results are shown in Appendix Table C3 Model (1). In Model (1) child's smoking behaviour and damaging things in public spaces showed a significant odds ratio (at the 10% and 5% of significance, respectively), but differences for the rest of the outcomes were not statistically significant at conventional levels.

Figure 6.3 shows the predicted z-scores for all outcomes with the exception of antisocial behaviours. Figure 6.4 shows the predicted probabilities of the child engaging in antisocial behaviours. As detailed above, most of the measures show that greater contact is associated with better outcomes, although only a few of the differences were statistically significant.

Court involvement and child outcomes

- Court involvement appeared to be associated with higher odds of engagement in antisocial behaviours (with the exception of smoking). The results, however, were only significant at conventional levels for damaging things in public spaces and so should be interpreted with caution.
- Court involvement did not produce any statistically significant variation in the other child outcome measures. Even so, with two exceptions (the Strength and Difficulties measure of socio-behavioural problems and the CGT measure of deliberation time), the direction of the regression coefficients suggests that court involvement could be negatively associated with children's outcomes.
- Taking into account the way in which the court involvement questions were asked in the survey and the lack of statistical power in the analytical sample, the results provide only tentative evidence. As such the predicted probabilities have not been presented.

Summary of key findings

The results provide some evidence of a relationship between contact between the child and the non-resident parent and better child outcomes. There is also some tentative

evidence that court involvement during the separation process could be associated with child outcomes.

Some of the measures were statistically significant at conventional levels, and for some other measures there was a similar relationship considering the magnitude of the coefficients and the small sample size. The results also tentatively suggest that court involvement during the separation process might be negatively associated with child outcomes.

Although it is outside the remit of this report to explore and explain why this might be the case, a few hypotheses can be discussed. Higher levels and quality of contact with the non-resident parent could indicate that, following separation, the child continues to have a stable (and possibly good) continued relationship with the non-resident parent and that the separated parents are more likely to collaborate and co-parent – which in turn could positively affect children's well-being and adjustment post separation. Conversely, experiencing court involvement could indicate that parents have experienced disagreements during the separation and possibly also during the post-separation phases, which could be negatively associated with children's emotional well-being and behaviours.

7. Conclusions and implications

This report contributes to an emerging body of research aiming to shed light on how parental separation might affect children's well-being and development. Guided by this overarching aim, this report conducted a secondary analysis of data drawn from the UK Millennium Cohort Study, the aim of which was to provide a more thorough understanding of the nature and consequences of post-separation contact with the non-resident parent and the role of court involvement.³²

The report has three key aims, and the key findings for each aim are summarised as follows.

Aim 1 – To describe variations in contact between children and non-resident parents

The frequency of contact between the child and the non-resident parent tended to decline as the time since separation increased. For example, for children who experienced parental separation between the age of 9 months (sweep 1) and 3 years (sweep 2), 65% had weekly contact with the non-resident parent at age 3 (sweep 2), while 51% had weekly contact at age 7 (sweep 4). At any sweep of data collection, there were only small differences in contact levels based on the cohort child's sex, while larger differences were found based on the parents' relationship status before the separation, with more contact for children whose parents were previously married. For children whose parents were married before separation took place, levels of financial support from the non-resident parent also tended to be higher. Conversely, parents who were married before separation took place were less likely to report a good relationship with each other post separation than parents who were cohabiting before separation. The level of contact between the child and the non-resident parent at age 7 (sweep 4) varied based on parental characteristics. In particular, more contact tended to be associated with parents' higher socio-economic status. It also varied based on court involvement, whereby contact between the child and the non-resident parent tended to be lower for families who had experienced court involvement than among families who did not experience court involvement.

Aim 2 – To describe how court use during the separation process varies by family characteristics

More affluent families appeared to be more likely to use courts for financial arrangements than less affluent families. There was no clear pattern relating to court use for contact

³² After excluding cases with missing values on the variables considered in the analyses, the MCS sample examined here comprised 6,668 children. By age 7, 826 of the children in this sample had experienced parental separation.

arrangements. Given the limitations of the questions asked in the MCS on court involvement (the questions were only asked if the resident parent reported some level of contact or provision of financial support) and the relatively small number of families that reported the use of court, it was not possible to undertake more in-depth analysis of court use.

Aim 3 – To document the size and extent of differences in child outcomes by parents’ relationship status and to investigate whether post-separation contact with the non-resident parent and court involvement are related to outcomes

Consistent with findings from previous studies, children who experienced parental separation by age 7 tended to have worse outcomes at age 11 than children whose parents were married at the time of birth and remained married until the child reached 11 (as measured by subjective well-being, behavioural and socio-emotional well-being, measures of risk taking, decision making and antisocial behaviours). These differences were small, however. Although this study did not examine the explanations for these differences, previous research suggests that a large part of these differences can be attributed to pre-separation family characteristics (see chapter 2). Focusing on the outcomes of children of separated parents only and how these may be mediated by two aspects of the separation process, the results provide some indication that more contact with the non-resident parent was associated with better outcomes for children – although few of the differences were statistically significant at conventional levels. The results also tentatively suggest that court involvement during the separation process might be negatively associated with child outcomes.

7.1 Implications

The findings from this report have a series of implications for theory and practice. First of all, the results show that the child and non-resident parent relationship is dynamic and varies over time. It is therefore important to assess whether the decline in contact over time can have adverse consequences for children’s longer-term well-being. Second, court involvement in agreeing contact arrangements where they are in place appears to be associated with less contact with the non-resident parent. Given the descriptive nature of the analyses, one should be cautious in suggesting that avoiding courts during the separation process could be conducive to higher post-separation contact with the non-resident parent. In fact, the association between these two variables could be the result of further factors which affect both the probability of experiencing court involvement and low levels of contact with the non-resident parent (e.g. pre-separation poor relationship quality). Therefore, it would be useful to explore and better understand the characteristics, experiences and motivations of those using the court system, the judgments that are made by court, and the extent to which court judgments are complied with.

Finally, since only a few of the differences were statistically significant at conventional levels, the results provide only tentative evidence that contact with the non-resident parent and court involvement are associated with children's outcomes following separation. The lack of statistical association for other differences should not, however, be interpreted as suggesting that contact with the non-resident parent is not relevant for children's outcomes.

The MCS provides a robust, high-quality source of data, and was judged the most appropriate existing source to address the aims of this report. Nonetheless there are limitations which are important to highlight when interpreting the results and discussing their implications for research and practice. Some of these limitations also provide directions for future research and data collection in this area.

First, despite the overall MCS sample of approximately 19,000 children, the analyses look at only a relatively small sample (n=826). This is the number of children who experienced parental separation between age 9 months and 7 years and had complete information on all the variables used in the analyses. The sample size could explain why some of the results did not reach statistical significance, although in some instances coefficients' sizes suggested meaningful differences. Future work should be conducted using different data sources, ideally using larger samples if such sources become available.

Second, the data did not provide any information regarding the quality of time the cohort child spends with the non-resident parent. The quantity of time the child spends with the non-resident parent might not always be a good proxy for relationship quality. It is important to know not just whether and how often the child spends time with the non-resident parent, but also to know what he/she does while spending time with the non-resident parent.

Third, contact with the non-resident parent was reported by the main respondent. To the extent that the post-separation relationship between the resident and non-resident parent might be characterised by conflict, the resident parent's report of the level of (the child's) contact with the non-resident parent might be subject to biases. Future studies would benefit if information on the frequency and quality of contact with the non-resident parent was collected directly from the cohort child and/or the non-resident parent and not just from the resident parent.

Fourth, information on court involvement was collected only from resident parents where the cohort child was in contact with the non-resident parent or the resident parent reported

receiving financial support from the non-resident parent. This means that it was not possible to fully identify families who experienced court involvement during the separation process. Those families who had experienced court involvement but who, at the time of interview, are no longer in contact with the non-resident parent or do not receive maintenance may differ from families that are asked the questions about court involvement and who are used in the analyses. Since contact with the non-resident parent declines as the time since separation increases, the filtering might also exclude families that have been separated for longer. More nuanced and complete data on both use of court, and alternative dispute resolution methods such as mediation, would enhance understanding of the extent to which these services are used and how they interplay with contact and finance arrangements.

Finally, there is a need for further research to examine the association between contact with the non-resident parent and court involvement by looking at longer-term outcomes as well as other dimensions of child outcomes. Sweep 6 of the Millennium Cohort Study, collected when cohort children are around 14 years old, will be available in the autumn of 2016, and could provide opportunities for some of these kinds of analyses to be conducted in the future.

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Appendix A

A1: Questions asked at MCS sweep 4

MILLENNIUM COHORT STUDY SWEEP 4: QUESTIONNAIRE DOCUMENTATION

MAIN RESPONDENTS ONLY

*IF respondent is the only resident natural parent and other natural parent has not died
OR respondent has a partner (cohort child's step-parent) from prior sweep who has now left
the household*

OR respondent is a foster parent

[uses mainly relationship variables from household questionnaire in HHQRE.Prer]

ASK <COPA> TO <NRLV> FOR EACH ABSENT PARENT/ STEP PARENT

COPA

I'd like now to ask you about [^name of absent parent] who no longer lives here.

Does [^name of cohort child] have any contact now with [^name of absent parent] ?

[^male/female, ^Date of birth, ^relationship to parent/ child (textfill details of absent parent)]

- 1 Yes
- 2 No
- 3 Person has died

IF cohort child has contact with other natural parent [Copa = 1]

SEOF

How often does [^name of absent parent] see [^Cohort child's name or twins' names etc]?

- 1 Every day
- 2 5-6 times a week
- 3 3-4 times a week
- 4 Once or twice a week
- 5 Less often but at least once a month
- 6 Less often than once a month
- 7 Never

STAY

Does [^Cohort child's name or twins' names etc] ever stay overnight with [^name of absent parent]?

INTERVIEWER: IF YES, PROMPT: Is that often, sometimes, or rarely?

- 1 Yes, often
- 2 Yes, sometimes
- 3 Yes, rarely
- 4 No, never

COWH

Were these arrangements for [^Cohort child's name or twins' names etc] to see [^name of absent parent] made by a court order?

- 1 Yes
- 2 No

PHOF

How often does [^Cohort child's name or twins' names etc] speak on the phone to [^name of absent parent]?

- 1 Every day
- 2 5-6 times a week
- 3 3-4 times a week
- 4 Once or twice a week
- 5 Less often but at least once a month
- 6 Less often than once a month
- 7 Never

MPOF

How often does [^Cohort child's name or twins' names etc] send emails or text messages to [^name of absent parent]?

- 1 Every day
- 2 5-6 times a week
- 3 3-4 times a week
- 4 Once or twice a week
- 5 Less often but at least once a month
- 6 Less often than once a month
- 7 Never

END OF FILTER

*IF respondent is the only resident natural parent and other natural parent has not died
OR respondent has a partner (cohort child's step-parent) from prior sweep who has now
left the household*

COMA

Does [^name of absent parent] contribute any money to [^his / her / their] maintenance?

IF YES, PROBE: Does [^name of absent parent] make regular payments?

- 1 Yes, regular payments
- 2 Yes, irregular payments
- 3 No payments made

IF contributes money to maintenance regularly or irregularly [CoMa = 1, 2]

COCO

Were these arrangements for financial support made by a court order or through the child support agency (CSA)?

- 1 Yes, by a court order
- 2 Yes, through the CSA
- 3 No

END OF FILTER

NRQR

SHOW CARD B6

Overall, how close would you say [[^]Cohort child's name or twins' names etc] [[^]is/ are] to [[^]name of absent parent]?

INTERVIEWER: IF OTHER IN ROOM 'You can tell me which number applies'

- 1 Not very close
- 2 Fairly close
- 3 Very close
- 4 Extremely close

NRLV

SHOW CARD B7

About how long would it take to get from where she/ he lives to here?
Think of the time it would usually take door to door

INTERVIEWER: TIME REFERS TO THE MOST LIKELY METHOD OF TRANSPORT BY NON-RESIDENT PARENT

- 1 Less than 15 minutes journey
- 2 15 minutes to less than 30 minutes journey
- 3 30 minutes to less than one hour's journey
- 4 One hour or more away, but within the UK
- 5 Outside the UK

END OF FILTER

END OF FILTER

END OF FILTER

INCH

SHOW CARD B4

How much interest would you say [[^]name of absent parent] shows in [[^]Cohort child's name or twins names etc]?

INTERVIEWER: IF OTHERS IN ROOM, 'You can tell me which number applies'

- 1 Very interested
- 2 Somewhat interested
- 3 Not very interested
- 4 Not at all interested

A2: Variables description

Post-separation contact with the non-resident parent	Original values	Recoding
Contact with the non-resident parent	Yes/no	
Frequency of contact between non-resident parent and the child	Every day/5–6 times a week/3–4 times a week/once or twice a week/at least once a month/less often than once a month/never	Regular contact=at least once a week vs No regular contact=rest
Quality of the relationship between non-resident parent and resident parent	very friendly/friendly/neither/unfriendly/very unfriendly	Good=very friendly/friendly vs Not good=rest
To what extent non-resident parent is interested in the child	Very interested/somewhat interested/not very interested/not at all interested	Interested=very/somewhat interested vs Less interested/interested=rest
To what extent non-resident parent is close to the child	Not very close/fairly close/very close/extremely close	Close=extremely/very close vs Less close=rest
Resident parent receives payments from non-resident parent	Regular payments/irregular payments/no payments	Some payment (regular or irregular) vs None
Child stays overnight with non-resident parent	Yes often/sometimes/yes rarely/never	Yes vs No
Distance between non-resident parent and the child	less than 15 minutes/15 to 30 minutes/30 min to 1 hour/more than 1 hr in UK/outside of UK	Not distant=up to 1 hour vs Distant=rest
How often the child talks over the phone with non-resident parent	Every day/5–6 times a week/3–4 times a week/once or twice a week/at least once a month/less often than once a month/never	Often=at least once a week either via phone or email vs Not often=rest
How often the child talks with emails or text to absent parent	Every day/5–6 times a week/3–4 times a week/once or twice a week/at least once a month/less often than once a month/never	

Summary measure of contact

A summary score of contact with the non-resident parent is constructed drawing on all seven measures of contact with the non-resident parent at sweep 4 (age 7). The summary measure is constructed by taking the average of the seven indicators of frequency and quality of contact with the non-resident parent, which results in a continuous variable which can take values between 0 and 1.

Court involvement	Values	Recoding
Contact arrangements made by a court order	Yes/no	A summary score is constructed for analyses looking at court involvement divided into 3 categories: 1) no contact with the non-resident parent; 2) contact with the non-resident parent and no court involvement (including CSA cases); 3) contact with non-resident parent and court involvement (for stay and/or financial arrangements).
Financial arrangements made by a court order or CSA (for cases where the non-resident parent makes regular or irregular payments)	Yes – court order / CSA / No	
Child outcomes	Values	Recoding
Strengths and Difficulties questionnaire	Continuous	z-score
Cambridge Gambling task (6 items)	Continuous	z-score
Subjective well-being	1 (very happy) to 7 (not happy)	z-score
Alcohol consumption (more than a few sips)	Yes/no	None
Ever tried smoking	Yes/no	None
Have you ever written things or sprayed paint on a building, fence or train or anywhere else where you shouldn't have?	Yes/no	None
Have you ever taken something from a shop without paying for it?	Yes/no	None
Have you ever on purpose damaged anything in a public place that didn't belong to you?	Yes/no	None
Have you ever been noisy or rude in a public place so that people complained or got you into trouble?	Yes/no	None

Pre-separation characteristics	Values	Recoding
Quality of current relationship between parents	Very happy to very unhappy – scale 1 to 7	Higher quality=5,6,7 vs Lower quality=1,2,3,4 (subject to change depending on results)
Household income quintiles (OECD adjusted)	Values from 1 to 5	None
Education (highest level in the household)	No education, NVQ levels 1 to 5	None, NVQ 1–2, NVQ 3, NVQ 4–5
Main respondent labour market involvement	Employed vs non-employed	None
CM number of siblings before separation occurs	Continuous	None vs at least one
Main respondent ethnicity	8 categories from Census classification	White, Pakistani & Bangladeshi, Indian, Black African & Black Caribbean, Other (mixed, other ethnic groups)
Social class (highest level in the household)	NS-SEC	Professional social class vs lower
Main respondent age at cohort child birth	Continuous	<23; 23–29; 30 and over
Parents' relationship status	Married or cohabiting	None
Post-separation characteristics	Values	Recoding
Main respondent is living with a new partner at sweep 4	Yes/no	None

A3: Description of the Cambridge Gambling Task

The test minimises learning, executive and working memory demands on participants, which can confound the interpretation of test scores. It also separates the decision making – where participants choose what to bet on – from risk taking, where participants decide how much then to bet on that choice. As described in Platt (2014), during the test the subject is presented with a row of ten red and blue boxes and is told that a yellow token is hidden in one of the boxes. The subject must first decide whether they think that the yellow token is hidden in a red box or a blue box. Secondly, they must decide how many points (from an initial 100 points) they wish to gamble on being correct. The likelihood of each choice being correct is indicated on each trial by the ratio of red to blue boxes displayed, and hence results in outcomes of a likely probability of winning (9:1, 8:2, 7:3) or an almost equal probability (6:4 or 5:5) of winning or losing. Sequences of trials are run in blocks under two conditions: an ascending condition and a descending condition in order to differentiate impulsive responses from genuine risk preference. In the ascending condition, the number of points that can be bet starts low and becomes increasingly larger. At first, one can bet 5% of one's total points, then after a two-second interval this increases to 25%, then 50%, then 75% and finally 95%: so to make larger bets one has to wait. In the descending condition, the number of points available to bet starts high and becomes increasingly smaller, so the subject is required to wait to make a lower bet.

A4: Basic descriptive results for child outcomes

Outcomes measured at sweep 5 (age 11)	Children of separated parents	Children of non-separated parents	Average	Min	Max
	Mean	Mean	Mean		
SDQ score reported by main respondent (higher worse)	8.80	6.58	6.91	0	36
CGT: Delay aversion (higher worse)	0.30	0.28	0.28	-0.9	0.9
CGT: Deliberation time (higher worse)	3296.60	3277.95	3280.69	468	31978
CGT: Overall proportion bet (higher worse)	0.49	0.49	0.49	0.05	0.95
CGT: Quality of decision making (higher better)	0.80	0.82	0.82	0	1
CGT: Risk adjustment (higher better)	0.62	0.77	0.75	-6.43	6.43
CGT: Risk taking (higher worse)	0.54	0.53	0.53	0.05	0.95
Child subjective well-being (higher worse)	2.11	1.81	1.86	1	7
	%	%	%		
Child has tried alcohol (self-reported)	15.1	11.8	12.3	0	1
Child has tried smoking (self-reported)	4.5	1.4	1.8	0	1
Child has been noisy in public (self-reported)	20.5	14.2	15.1	0	1
Child has stolen from shop (self-reported)	5.9	3.1	3.5	0	1
Child has written on buildings (self-reported)	2.4	1.9	1.9	0	1
Child damaged things in public place (self-reported)	3.2	1.1	1.4	0	1
N	826	5845	6671	Full MCS sample	

Source: Millennium Cohort Study.

Note: the estimates were obtained using survey weights to account for the complex structure of the MCS

Appendix B

Child outcomes by family structure (Aim1)

Appendix Table B1: Cohort child outcomes at age 11 by sweep of separation and parents' relationship status at birth for children of parents who don't separate (means or % with 95% confidence intervals)

	CM experienced parental separation		
	Yes	No	
		Married at birth	Cohabiting at birth
SDQ score (reported by main respondent) (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	0.34 (0.18 to 0.49)		
Child age at separation: 3 years – 5 years	0.33 (0.17 to 0.50)	-0.17 (-0.20 to -0.13)	0.07 (0.01 to 0.14)
Child age at separation: 5 years – 7 years	0.18 (0.04 to 0.32)		
CGT: Delay aversion (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	0.03 (-0.10 to 0.15)		
Child age at separation: 3 years – 5 years	0.05 (-0.11 to 0.21)	-0.02 (-0.05 to 0.01)	-0.04 (-0.12 to 0.03)
Child age at separation: 5 years – 7 years	0.15 (0.02 to 0.28)		
CGT: Deliberation time (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	-0.07 (-0.15 to 0.02)		
Child age at separation: 3 years – 5 years	-0.01 (-0.12 to 0.11)	-0.05 (-0.08 to -0.02)	0.02 (-0.05 to 0.09)
Child age at separation: 5 years – 7 years	0.02 (-0.16 to 0.20)		
CGT: Overall proportion bet (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	0.10 (-0.05 to 0.25)		
Child age at separation: 3 years – 5 years	0.04 (-0.09 to 0.17)	-0.01 (-0.05 to 0.04)	0.03 (-0.05 to 0.10)
Child age at separation: 5 years – 7 years	0.04 (-0.09 to 0.17)		

CGT: Quality of decision making (higher better)		mean z-score*	
Child age at separation: 9 months – 3 years	0.00 (-0.17 to 0.17)		
Child age at separation: 3 years – 5 years	-0.05 (-0.19 to 0.10)	0.10 (0.06 to 0.14)	0.04 (-0.03 to 0.10)
Child age at separation: 5 years – 7 years	-0.02 (-0.19 to 0.14)		
CGT: Risk adjustment (higher better)		mean z-score*	
Child age at separation: 9 months – 3 years	-0.13 (-0.28 to 0.02)		
Child age at separation: 3 years – 5 years	-0.12 (-0.25 to 0.02)	0.10 (0.06 to 0.14)	0.00 (-0.06 to 0.07)
Child age at separation: 5 years – 7 years	0.07 (-0.09 to 0.22)		
CGT: Risk taking (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	0.10 (-0.05 to 0.25)		
Child age at separation: 3 years – 5 years	0.07 (-0.06 to 0.20)	0.00 (-0.04 to 0.04)	0.04 (-0.03 to 0.11)
Child age at separation: 5 years – 7 years	0.03 (-0.10 to 0.17)		
Child subjective well-being (higher worse)		mean z-score*	
Child age at separation: 9 months – 3 years	0.18 (0.01 to 0.34)		
Child age at separation: 3 years – 5 years	0.22 (0.06 to 0.38)	-0.08 (-0.11 to -0.05)	0.01 (-0.05 to 0.08)
Child age at separation: 5 years – 7 years	0.07 (-0.09 to 0.23)		
Child has tried alcohol (self-reported)		%	
Child age at separation: 9 months – 3 years	21 (15 to 26)		
Child age at separation: 3 years – 5 years	13 (9 to 18)	11 (10 to 12)	14 (12 to 17)
Child age at separation: 5 years – 7 years	11 (7 to 15)		

Child has tried smoking (self-reported)		%	
Child age at separation: 9 months – 3 years	4 (1 to 8)		
Child age at separation: 3 years – 5 years	5 (2 to 7)	1 (1 to 2)	2 (1 to 3)
Child age at separation: 5 years – 7 years	5 (2 to 8)		
Child has been noisy in public (self-reported)		%	
Child age at separation: 9 months – 3 years	21 (15 to 26)		
Child age at separation: 3 years – 5 years	20 (15 to 26)	14 (13 to 15)	16 (14 to 18)
Child age at separation: 5 years – 7 years	20 (14 to 27)		
Child has stolen from shop (self-reported)		%	
Child age at separation: 9 months – 3 years	5 (1 to 8)		
Child age at separation: 3 years – 5 years	8 (5 to 12)	3 (2 to 3)	4 (3 to 6)
Child age at separation: 5 years – 7 years	5 (2 to 7)		
Child has written on buildings (self-reported)		%	
Child age at separation: 9 months – 3 years	2 (0 to 4)		
Child age at separation: 3 years – 5 years	3 (1 to 5)	2 (1 to 2)	3 (2 to 4)
Child age at separation: 5 years – 7 years	2 (0 to 4)		
Child damaged things in public place (self-reported)		%	
Child age at separation: 9 months – 3 years	4 (1 to 8)		
Child age at separation: 3 years – 5 years	2 (0 to 4)	1 (1 to 1)	2 (1 to 2)
Child age at separation: 5 years – 7 years	3 (0 to 5)		

Source: Millennium Cohort Study. Z-score: SDQ, CGT and SWB are standardised to have a mean 0 and standard deviation 1. For each of these measures, children with a value above the average have a z-score above 0 (i.e. positive), children who have an average value have a z-score close to 0 and children with a value below average have a z-score below 0 (i.e. negative). Note: the estimates are obtained using survey weights to account for the complex survey design of the MCS.

Appendix Table B2: OLS model regression child outcomes at age 11 on family structure

	SDQ (higher worse)	CGT Delay aversion (higher worse)	CGT Deliberation time (higher worse)	CGT Overall proportion bet (higher worse)	CGT Quality of decision making (higher better)	CGT Risk adjustment (higher better)	CGT Risk taking (higher worse)	Subjective well-being (higher worse)
	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se
Parents cohabiting at birth and remained together (<i>reference: parents married at birth and remained together</i>)	0.244*** (0.036)	-0.026 (0.040)	0.073** (0.035)	0.034 (0.038)	-0.065 (0.040)	-0.100** (0.040)	0.038 (0.037)	0.093** (0.037)
Parents separated between sweep 1 (9 months) and sweep 2 (3 years)	0.505*** (0.081)	0.046 (0.064)	-0.015 (0.057)	0.108 (0.074)	-0.099 (0.088)	-0.234*** (0.077)	0.095 (0.075)	0.256*** (0.085)
Parents separated between sweep 2 (3 years) and sweep 3 (5 years)	0.501*** (0.085)	0.069 (0.084)	0.041 (0.058)	0.046 (0.066)	-0.149** (0.076)	-0.219*** (0.068)	0.068 (0.064)	0.302*** (0.081)
Parents separated between sweep 3 (5 years) and sweep 4 (7 years)	0.351*** (0.070)	0.169*** (0.065)	0.073 (0.091)	0.042 (0.065)	-0.125 (0.084)	-0.036 (0.083)	0.032 (0.068)	0.148* (0.080)
Constant	-0.169*** (0.018)	-0.018 (0.016)	-0.050*** (0.017)	-0.006 (0.021)	0.101*** (0.021)	0.103*** (0.021)	0.001 (0.019)	-0.079*** (0.016)
Number of observations					6,668			

Note: *** $p < 0.01$, ** $p < 0.05$, * $p < 0.1$.

Standard error provided in parentheses below the regression coefficients (β). β is the regression coefficient which represents the standard deviation change in the child outcome under consideration if the child belongs to one type of family structure as opposed to continuously married parents. 'Higher worse' means that a positive regression coefficient indicates worse well-being on that particular outcome, while 'higher better' means that a positive regression coefficient indicates higher well-being.

Appendix Table B3: Logistic models regressing child outcomes at age 11 on family structure

	Child has tried alcohol	Child has tried smoking	Child has been noisy in public	Child has stolen from shop	Child has written things on buildings	Child has damaged things in public places
	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se
Parents cohabiting at birth and remained together (<i>reference: parents married at birth and remained together</i>)	1.365*** (0.155)	1.395 (0.387)	1.170 (0.115)	1.497* (0.318)	1.639** (0.398)	1.649 (0.528)
Parents separated between sweep 1 (9 months) and sweep 2 (3 years)	2.109*** (0.381)	3.517*** (1.562)	1.627*** (0.297)	1.726 (0.697)	1.284 (0.675)	4.489*** (1.982)
Parents separated between sweep 2 (3 years) and sweep 3 (5 years)	1.232 (0.252)	3.760*** (1.388)	1.622*** (0.287)	3.228*** (0.876)	1.867 (0.709)	2.498* (1.199)
Parents separated between sweep 3 (5 years) and sweep 4 (7 years)	0.980 (0.217)	3.878*** (1.520)	1.617** (0.326)	1.661 (0.577)	1.294 (0.597)	2.652* (1.451)
Constant	0.123*** (0.008)	0.013*** (0.002)	0.159*** (0.008)	0.029*** (0.003)	0.016*** (0.002)	0.010*** (0.002)
Number of observations	6668					

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard error provided in parentheses below the Odds Ratio (OR). The OR represents the odds that the child engages in an antisocial behaviour in a particular family structure, compared to the odds of the outcome occurring to children of continuously married parents.

Appendix C

Outcomes of children who experience separation between sweep 1 (9 months) and sweep 4 (age 7) by contact with the non-resident parent at sweep 4 and court involvement during the separation process

Appendix Table C1: OLS regression models on cohort child outcomes and summary measure of contact with the non-resident parent at sweep 4 (age 7)

	SDQ (higher worse)		CGT Delay aversion (higher worse)		CGT Deliberation time (higher worse)		CGT Overall proportion bet (higher worse)		CGT Quality of decision making (higher better)		CGT Risk adjustment (higher better)		CGT Risk taking (higher worse)		Subjective well-being (higher worse)	
	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Summary measure of contact with the NRP at sweep 4	-0.140	-0.101	-0.035	-0.072	0.271**	0.255*	-0.112	-0.097	-0.157	-0.155	0.156	0.105	-0.046	-0.029	0.010	0.040
	(0.168)	(0.167)	(0.117)	(0.126)	(0.137)	(0.131)	(0.160)	(0.160)	(0.219)	(0.223)	(0.134)	(0.134)	(0.162)	(0.162)	(0.147)	(0.150)
Girl (<i>reference boy</i>)	-0.204**	-0.211**	0.346***	0.343***	0.112	0.116	0.454***	0.458***	-0.078	-0.079	-0.085	-0.081	0.466***	0.470***	0.073	0.072
	(0.084)	(0.084)	(0.077)	(0.077)	(0.077)	(0.075)	(0.077)	(0.076)	(0.080)	(0.081)	(0.067)	(0.066)	(0.082)	(0.082)	(0.083)	(0.083)
Child age at separation: 3 years – 5 years (<i>reference: 9 months – 3 years</i>)		0.037		0.027		0.002		-0.010		-0.021		0.000		0.014		0.026
		(0.109)		(0.108)		(0.088)		(0.092)		(0.117)		(0.097)		(0.094)		(0.116)

Child age at separation: 5 years – 7 years (<i>reference: 9 months – 3 years</i>)	-0.105	0.114	0.008	-0.014	0.016	0.168	-0.029	-0.133								
	(0.107)	(0.103)	(0.094)	(0.095)	(0.117)	(0.114)	(0.100)	(0.117)								
Cohabiting before separation (<i>reference: married</i>)	0.092	-0.053	-0.121	0.099	0.057	-0.043	0.075	-0.054								
	(0.100)	(0.084)	(0.076)	(0.079)	(0.108)	(0.085)	(0.083)	(0.094)								
Constant	0.472***	0.433***	0.262***	0.261**	-0.238***	-0.185*	0.348***	0.309**	0.110	0.089	-0.120	-0.125	0.320***	0.286**	0.119	0.154
	(0.120)	(0.135)	(0.084)	(0.109)	(0.084)	(0.097)	(0.106)	(0.126)	(0.133)	(0.139)	(0.096)	(0.110)	(0.105)	(0.130)	(0.101)	(0.125)

Source: Millennium Cohort Study.

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard error provided in parentheses below the regression coefficients (β). β is the regression coefficient which represents the standard deviation change in the child outcome under consideration per standard unit change in summary contact with the non-resident parent. The estimates were obtained using survey weights to account for the complex structure of the MCS. 'Higher worse' means that a positive regression coefficient indicates worse well-being on that particular outcome, while 'higher better' means that a positive regression coefficient indicates higher well-being.

Appendix Table C2: Logistic regression models on cohort child outcomes based on contact with the non-resident parent at age 4

	Child has tried alcohol		Child has tried smoking		Child has been noisy in public		Child has stolen from shop		Child has written things on buildings		Child has damaged things in public places	
	OR/se Model 1	OR/se Model 2	OR/se Model 1	OR/se Model 2	OR/se Model 1	OR/se Model 2	OR/se Model 1	OR/se Model 2	OR/se Model 1	OR/se Model 2	OR/se Model 1	OR/se Model 2
Summary measure of contact with the NRP at sweep 4	1.184	1.490	0.371*	0.345*	0.811	0.807	0.997	0.986	0.422	0.405	0.148**	0.161**
	(0.473)	(0.605)	(0.201)	(0.188)	(0.308)	(0.301)	(0.819)	(0.887)	(0.252)	(0.243)	(0.130)	(0.134)
Girl (<i>reference: boy</i>)	0.504***	0.503***	0.279***	0.275***	0.534***	0.520***	0.540	0.538	0.527*	0.495**	0.127***	0.122***
	(0.121)	(0.122)	(0.135)	(0.133)	(0.125)	(0.121)	(0.267)	(0.271)	(0.176)	(0.166)	(0.083)	(0.080)
Child age at separation: 3 years – 5 years (<i>reference: 9 months – 3 years</i>)		0.575*		1.186		1.574**		0.731		1.558		2.598**
		(0.163)		(0.456)		(0.346)		(0.403)		(0.537)		(1.194)
Child age at separation: 5 years – 7 years (<i>reference: 9 months – 3 years</i>)		0.433***		1.285		1.181		1.367		2.358**		0.902
		(0.123)		(0.570)		(0.300)		(0.826)		(0.845)		(0.490)
Cohabiting before separation (<i>reference: married</i>)		0.976		1.388		1.226		0.898		1.310		1.143
		(0.232)		(0.716)		(0.335)		(0.614)		(0.597)		(0.727)
Constant	0.214***	0.282***	0.129***	0.104***	0.384***	0.285***	0.032***	0.033***	0.135***	0.077***	0.158***	0.094***
	(0.068)	(0.098)	(0.054)	(0.052)	(0.094)	(0.092)	(0.018)	(0.020)	(0.058)	(0.036)	(0.082)	(0.060)
N	826											

Source: Millennium Cohort Study.

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard error provided in parentheses below Odds Ratio (OR). The OR represents the odds that the child engages in an antisocial behaviour given a one-unit increase in the summary measure of contact with the non-resident parent, compared to the odds of the outcome occurring in the absence of that increase. The estimates were obtained using survey weights to account for the complex structure of the MCS.

Appendix Table C3: OLS regression models on cohort child based on court involvement

	SDQ (higher worse)		CGT Delay aversion (higher worse)		CGT Deliberation time (higher worse)		CGT Overall proportion bet (higher worse)		CGT Quality of decision making (higher better)		CGT Risk adjustment (higher better)		CGT Risk taking (higher worse)		Subjective well-being (higher worse)	
	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se	β /se
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Contact and court involvement <i>(reference: contact and no court involvement)</i>	-0.067	-0.127	0.132	0.177	-0.206	-0.180	0.182	0.163	-0.255	-0.270	-0.174	-0.112	0.146	0.126	0.270	0.241
	(0.228)	(0.229)	(0.169)	(0.175)	(0.146)	(0.144)	(0.231)	(0.229)	(0.243)	(0.241)	(0.150)	(0.153)	(0.242)	(0.242)	(0.219)	(0.219)
No contact	0.155	0.169	-0.003	-0.008	0.117	0.104	0.054	0.066	0.096	0.104	0.055	0.053	0.061	0.072	-0.008	-0.016
	(0.121)	(0.123)	(0.108)	(0.106)	(0.151)	(0.146)	(0.125)	(0.125)	(0.126)	(0.126)	(0.129)	(0.131)	(0.118)	(0.119)	(0.124)	(0.125)
Girl <i>(reference: boy)</i>	-0.209**	-0.218***	-0.344***	-0.339***	0.108	0.112	-0.452***	-0.456***	-0.087	-0.090	-0.089	-0.084	-0.463***	-0.468***	0.080	0.079
	(0.084)	(0.085)	(0.076)	(0.076)	(0.076)	(0.074)	(0.078)	(0.077)	(0.080)	(0.081)	(0.067)	(0.067)	(0.083)	(0.083)	(0.082)	(0.082)
Child age at separation: 3 years – 5 years <i>(reference: 9 months – 3 years)</i>		0.037		0.025		0.021		-0.011		-0.030		0.007		0.018		0.031
		(0.110)		(0.106)		(0.085)		(0.093)		(0.112)		(0.096)		(0.095)		(0.116)
Child age at separation: 5 years – 7 years <i>(reference: 9 months – 3 years)</i>		-0.121		0.118		0.032		-0.012		-0.021		0.176		-0.020		-0.110
		(0.107)		(0.102)		(0.096)		(0.096)		(0.111)		(0.112)		(0.101)		(0.117)
Cohabiting before separation <i>(reference: married)</i>		0.108		-0.057		-0.110		0.101		0.071		-0.037		0.078		-0.060

		(0.101)		(0.085)		(0.075)		(0.080)		(0.111)		(0.087)		(0.084)		(0.096)
Constant	0.373***	0.359***	0.233***	0.208**	-0.076	-0.050	0.263***	0.231**	0.020	0.009	-0.021	-0.068	0.276***	0.247***	0.108*	0.158
	(0.061)	(0.103)	(0.048)	(0.092)	(0.058)	(0.077)	(0.055)	(0.093)	(0.063)	(0.125)	(0.057)	(0.101)	(0.053)	(0.095)	(0.065)	(0.105)
N									826							

Source: Millennium Cohort Study.

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard error provided in parentheses below the regression coefficients (β). β is the regression coefficient which represents the standard deviation change in the child outcome under consideration per standard unit change in the summary measure of court involvement. The estimates were obtained using survey weights to account for the complex structure of the MCS. 'Higher worse' means that a positive regression coefficient indicates worse well-being on that particular outcome, while 'higher better' means that a positive regression coefficient indicates higher well-being.

Appendix Table C4: Logistic regression models on cohort child outcomes based on court involvement³³

	Child has tried alcohol		Child has tried smoking		Child has been noisy in public		Child has written things on buildings		Child has stolen from shop		Child has damaged things in public places	
	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se	OR/se
	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2	Model 1	Model 2
Contact and court involvement (reference: contact and no court involvement)	1.151	0.950	0.732	0.729	1.825	1.813	2.333	2.163	1.661	1.659	6.345**	6.213**
	(0.645)	(0.539)	(0.712)	(0.711)	(0.942)	(0.948)	(1.632)	(1.588)	(1.760)	(1.808)	(5.034)	(4.702)
No contact	1.658	1.645	2.654*	2.738*	1.461	1.568	1.915	2.116	0.945	0.921	2.646	2.931
	(0.537)	(0.559)	(1.403)	(1.458)	(0.437)	(0.475)	(0.925)	(1.044)	(0.823)	(0.827)	(1.884)	(2.125)
Girl (reference: boy)	0.501***	0.496***	0.267***	0.265***	0.537***	0.523***	0.529*	0.503**	0.548	0.549	0.130***	0.123***
	(0.122)	(0.122)	(0.131)	(0.129)	(0.127)	(0.123)	(0.178)	(0.172)	(0.270)	(0.278)	(0.085)	(0.080)
Child age at separation: 3 years – 5 years (reference: 9 months – 3 years)		0.602*		1.296		1.617**		1.628		0.719		2.754**
		(0.171)		(0.514)		(0.358)		(0.570)		(0.422)		(1.362)
Child age at separation: 5 years – 7 years (reference: 9 months – 3 years)		0.459***		1.227		1.199		2.308**		1.375		0.797
		(0.128)		(0.535)		(0.309)		(0.809)		(0.792)		(0.438)
Cohabiting before separation (reference: married)		1.013		1.179		1.276		1.272		0.944		1.178
		(0.244)		(0.601)		(0.362)		(0.574)		(0.620)		(0.760)
Constant	0.219***	0.322***	0.063***	0.050***	0.309***	0.220***	0.070***	0.038***	0.031***	0.031***	0.039***	0.024***
	(0.035)	(0.082)	(0.016)	(0.021)	(0.048)	(0.055)	(0.017)	(0.014)	(0.009)	(0.016)	(0.014)	(0.011)
N	826											

Source: Millennium Cohort Study.

Note: *** p<0.01, ** p<0.05, * p<0.1. Standard error provided in parentheses below Odds Ratio (OR). The OR represents the odds that the child engages in an antisocial behaviour given a one-unit increase in the summary measure of court involvement, compared to the odds of the outcome occurring in the absence of that increase. The estimates were obtained using survey weights to account for the complex structure of the MCS.

³³ Model 1 controls for the cohort child's gender. Model 2 also includes controls for the parents' relationship status before separation and the cohort child's age at separation.