

An exploration of the timing and nature of parental time with 4–5 year olds using Australian children's time use data

Jennifer Baxter



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About the author

Jennifer Baxter is a Research Fellow at the Australian Institute of Family Studies (AIFS), where she works largely on employment issues as they relate to families with children. Since starting at AIFS, Jennifer has made a significant contribution to a number of important reports, including the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA) Social Policy Research Paper No. 30, *Mothers and Fathers with Young Children: Paid Employment, Caring and Wellbeing* (Baxter, Gray, Alexander, Strazdins, & Bittman, 2007) and AIFS' submission to the Productivity Commission Parental Leave Inquiry (2008). She has also contributed several *Family Matters* articles and had work published in other journals. Her research interests include maternal employment following childbearing, child care use, job characteristics and work–family spillover, breastfeeding, children's time use and parental time with children. She has made extensive use of data from the Longitudinal Study of Australian Children (LSAC) to explore these areas of research.

Jennifer was awarded a PhD in the Demography and Sociology Program of the ANU in 2005. Her work experience includes more than fifteen years in the public sector, having worked in a number of statistical and research positions in government departments.

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This Research Paper makes use of data from the Longitudinal Study of Australian Children (LSAC). *Growing Up in Australia: The Longitudinal Study of Australian Children*, is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs, the Australian Institute of Family Studies and the Australian Bureau of Statistics, with advice provided by a consortium of leading researchers.

Abstract

Parental time with children contributes to children's development and is positively associated with children's wellbeing. However, the amount of parent-child shared time does not necessarily capture its "quality". Parents, in their time with children, might be teaching them, encouraging and nurturing them and physically caring for them. At other times, parent and child may be together but engaging in less developmentally focused activities. While this parent-child time is often analysed using adults' time use data, it is also possible to analyse this time from the child's perspective. This paper uses just over 5,000 time use diaries of 4-5 year old children, collected in the first wave (2004) of *Growing Up in Australia: The Longitudinal Study of Australian Children* (LSAC). About half the diaries were for weekdays and half for weekends. These diaries captured details both of the children's activities and of who was with them in each 15-minute period. The "who with" data were used to compile measures of parent-child time; that is, times when the mother or the father was with the child. The activity data were used to describe the nature of the parent-child time. These data were analysed using descriptive techniques to show how the timing of mothers' and fathers' time with the children and children's activities intersect. Further, these data were analysed in respect of parents' and children's characteristics to determine whether certain factors, in particular parental employment, were associated with more or less parent-child time or the nature of that parent-child time. Throughout, mother-child and father-child time were considered separately, as were weekend and weekday time.

Executive summary

One important aspect of parenthood is that of spending time with one's children. But the total amount of parent-child shared time does not necessarily capture the "quality" of the time parents and children spend together. Some shared time is likely to be spent in more developmentally focused activities than at other times. One way the nature of the shared time between parents and children can be explored is to examine what children are doing while they are with their mother or their father. This is the focus of this paper. The nature of father-child time and mother-child time are examined, looking for differences in what children are doing with their fathers compared to with their mothers, and incorporating child and family characteristics in order to explain differences in mother-child and father-child time.

The paper uses data collected in Wave 1 of *Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC)*, conducted throughout 2004. This study follows two cohorts of children, but the younger cohort were not analysed in this paper. The children in the older cohort were aged 4 years 3 months to 5 years 7 months at interview. The vast majority of these children were not yet in school, but almost all spent time in early education or child care. The sample was restricted to children living with both biological parents.

One of the components of LSAC is a time use diary (TUD). In the TUD, details of the study child's activities are recorded over two randomly assigned days, one a weekday and one a weekend day. LSAC's large sample size resulted in over 5,000 diaries that were able to be used for this analysis. The diaries divided the day into 15-minute time intervals and parents were asked to mark the times during which their child was involved in any of 26 pre-coded activities. The activity details are grouped into a broader classification for use throughout this analysis. The main activity groups were "personal care", "television", "achievement-oriented", "exercise", "other play", "social and organised", "travel and taken places" and "sleeping/resting".

A large amount of children's time awake was spent in personal care, which was predominantly eating and drinking, but also included bathing and dressing and other activities that contributed smaller amounts to the total. On weekdays, children spent a considerable amount of time in social and organised activities. This included child care, preschool and other organised lessons, which were the main contributors on weekdays, although it also included visiting people, which was a greater contributor on weekends. Other activities were more likely on weekends than weekdays; in particular, on weekends more time was spent in exercise and other play.

Within the TUD, for each 15-minute period, information was also collected on who the child was with. Possible categories included with their mother and with their father. These times are referred to as mother-child time and father-child time respectively, and are the focus of this paper. The analyses of parental time focus on the times during which the child is awake.

Children were at all times more likely to be with their mother than their father, and children were more likely to be with their parents on the weekend than on weekdays. On a weekday, children in couple families were awake for 721 minutes, on average. During this time they spent, on average, 406 minutes with their mother (56% of awake time) and 182 minutes with their father (25% of awake time). On weekends, out of a slightly lesser time awake (710 minutes), the average time with mother was greater (500 minutes, 70% of time awake), as was the average time with father (402 minutes, 57% of time awake). The time children spent with their father very often overlapped with the time they spent with their mother.

On weekdays, a significant portion of children's days was spent in social and organised activities—an activity for which mothers and fathers were very often not also present. Parents were more often present outside this time—they were most likely to be with their child in the mornings and evenings, and this was especially so for fathers. This has implications for understanding what children are doing while with their parents. These peak times of parent–child shared time are also two peaks of personal care time—largely reflecting time spent eating. As a result, for weekdays, parent–child time was disproportionately during personal care time.

Comparing weekday time for mothers and fathers, mother–child and father–child times were fairly similarly distributed across children's activities, even though there was a large difference in the amount of time mothers and fathers spent with children. The main difference in distributions was that more father–child time was during personal care time and more mother–child time was during “travel and taken places” time. This is explained by father–child time aligning with morning and evening meal times—when the personal care activity of eating occurs—and also by mothers being more likely to be present, especially in the after-school period, when “travel and taken places” frequently occurs.

On weekends, mothers spent longer with children than fathers, on average, but the distributions of mother–child and father–child time according to the child's activity were virtually the same. That is, on weekends it did not appear that mothers and fathers allocated their time to children differently according to what the child was doing. The mother–child time and father–child time was most similar on weekends for exercise activities, although for each activity group, mother–child time was higher than father–child time.

The analyses in the paper also explore how parental employment was associated with the distribution of mother–child and father–child time over children's activities. A significant factor in explaining the total amount of parent–child time on weekdays was the parent's own work hours, which relates to parental availability, and shows that time spent with children is constrained by hours of employment. Not surprisingly, for both mothers and fathers, working longer hours resulted in less parent–child time. With fathers more likely than mothers to be employed, and usually in paid employment for longer hours, this is an important factor in explaining differences between mothers and fathers in the total amount of parent–child time. Parental employment relationships with parent–child time are apparent on weekdays in less parent–child time during the daytime hours, although there is little evidence that longer work hours have large effects on the amount of time parents spend with children in the evening. More hours of parental employment tended to decrease the time parents spent with children during children's personal care time. For fathers, longer work hours also resulted in lesser amounts of shared time watching television, doing achievement-oriented activities and other play.

Parental education was found to explain some variation in weekday parent–child time, more so in relation to activity-specific parent–child time, than in the total amount of time parents spend with children. Parents having higher education (bachelor degree or higher) was generally associated with less shared time watching television and more shared time doing achievement-oriented activities. This mirrors the relationship between parental education and total amount of time children spend in these activities, and is likely to reflect how parents shape their children's days. For weekend time, more highly educated fathers—but not mothers—spent more time with their child, and this reflected time spent in a range of activities, but not television time.

To summarise, this analysis has shown that while mothers and fathers spend quite different amounts of time with children, the time that they do spend with children tends to cover similar aspects of children's days. In part, this is because children aged 4 to 5 years spend a significant part of their weekday absent from their parents while attending early education or child care, even if one parent is not employed. Therefore, the times parents and children are together on weekdays are most often mornings—when everyone is getting ready for the day, having breakfast, then travelling—and evenings—when, again, all family members are most likely to be present for meal times and getting ready for bed. Of course, there is considerable variation in these patterns across families, with parental employment arrangements in particular meaning that some mothers and some fathers are available to spend time with their children at different times of the day.

These data cannot be used to analyse the *types* of childrearing tasks that mothers and fathers undertake, so cannot address issues of gender equity in terms of household work. Nevertheless, they are useful for understanding whether fathers, by spending less time with their children than

mothers, miss out on particular aspects of their children's lives. While these data showed that fathers spend less time with their children across various activities, they do not appear to miss out on any particular activity. In part this is because, despite on average spending longer in paid employment over the day, they are often present for some time in the morning, late afternoon and evening, and also on weekends, when family time provides opportunities for engagement with children.

Parental time with children was disaggregated by children's activities with a view to understanding the quality of parental time with children: to differentiate time that might be less developmentally focused from time that might provide opportunities for more engagement or interaction between parents and children. However, it is true that opportunities for development may be present during any of the activities children do while with their parents. For example, much of parental time with children was during personal care time, and while the activities of eating or getting dressed may be in themselves less interesting, parental interaction between children and parents during these activities may provide opportunities to talk and listen to each other, providing the environment to develop relationships and social and cognitive skills. In some families, this will even be true while children are watching television. In fact, it could be expected that parents who are determined to develop relationships with their children and help their children's development will take advantage of whatever time they have with their children to do so.

An exploration of the timing and nature of parental time with 4–5 year olds

Parenthood involves many roles, responsibilities and tasks. One important aspect is that of spending time with one's children. This parental input contributes to children's development and is positively associated with children's wellbeing (Bryant & Zick, 1996; Nock & Kingston, 1988). The total amount of parent–child shared time does not necessarily capture the “quality” of that time. Parents, in their time with children, might be teaching them, encouraging and nurturing them and physically caring for them. At other times, parent and child may be together but engaging in less developmentally focused activities. The nature of parent–child time is often analysed using information from the parents' perspective, using adults' time use data (for example, Craig, 2006a, 2007). It is also valuable to examine what children do during time shared with parents since the activities that children do and their interactions with others enhance their opportunities for intellectual and social development (Cooksey & Fondell, 1996; Crouter & McHale, 2005).

Very few analyses of parent–child time have taken this perspective, with the main notable exception being that of Yeung, Sandberg, Davis-Kean and Hofferth (2001), who analysed 1997–98 children's time use data from the United States for children aged 0–12 years. Yeung et al.'s paper focused on father–child time, although comparisons were made to mother–child time.

Like Yeung et al.'s paper, this analysis examines the nature of father–child time and mother–child time, looking for differences in what children are doing with their fathers compared to with their mothers, and incorporating child and family characteristics in order to explain differences in mother–child and father–child time. This paper goes on to consider mother–child and father–child time by time of day and by weekend or weekday. Further, this study focuses on a narrower age group than Yeung et al.—that of 4–5 year old children—and uses recently collected (2004) Australian children's time use data.

These data were collected in Wave 1 of *Growing Up in Australia: The Longitudinal Study of Australian Children (LSAC)*. This study follows two cohorts of children, and time use data were collected from both, but the younger cohort (aged around one year at Wave 1) were not analysed in this paper. LSAC's large sample size resulted in over 5,000 diaries that were able to be used for this analysis. This allows for a detailed analysis of time-of-day patterns and analysis of factors associated with differences in overall or activity-specific parent–child time. In particular, the relationship between parent–child time and participation in the labour market is considered for children living with both biological parents. This paper expands on some earlier work on this topic using these data (Baxter, 2009; Baxter, Gray, Alexander, Strazdins, & Bittman, 2007), and on an analysis of these children's activities (Baxter & Hayes, 2007).

Previous research

The most clearly recognised feature of parent–child time is the gender imbalance: mothers spend more time with their children than fathers (Bryant & Zick, 1996; Craig, 2006a; McBride & Mills, 1993; Sayer, Bianchi, & Robinson, 2004). This is not surprising, given that mothers often reduce their participation in the labour market to care for children while they are young. Fathers rarely do this. Fathers are more likely to be in paid employment throughout the day, especially on weekdays.

The gender imbalance is also evident in terms of the types of activities mothers and fathers do with their children. Adult time use diaries show that mothers and fathers differ in the activities they undertake with children (Craig, 2006a; McBride & Mills, 1993; Sayer, Bianchi et al., 2004). Fathers

are less likely than mothers to participate in aspects of physical care of children (for example, bathing them) and more likely to spend disproportionately more of their time with children doing “fun” activities (Gauthier, Smeeding, & Furstenberg, 2004; Nock & Kingston, 1988). Craig (2006a) noted that fathers are more likely to participate in those activities that are not time-constrained (for example, reading to children), compared to mothers, who are more likely to undertake the time-constrained activities of preparing meals, transporting and bathing children. Nevertheless, a number of studies have shown that fathers undertake a wide range of activities with their children (Bryant & Zick, 1996; Gauthier et al., 2004; Nock & Kingston, 1988), even if they spend disproportionately more time doing the “fun” aspects of child care.

From the child’s perspective, Yeung et al. (2001) found that fathers are present for a wide array of children’s activities, and fathers “become more equal partners in caring for children on weekends” (p. 153). Looking at just the activities of 3–5 year old children on weekends in Yeung et al.’s study, the level of engagement with children for fathers relative to mothers was greatest for play and companionship (fathers actually did more than mothers, with a ratio of 1.03) and social activities (0.98). It was lowest for teaching and achievement-related activities (0.57). In between were caregiving, including having meals together (0.81), and household activities (0.71). Weekday patterns were different, with the ratio always reflecting a higher level of engagement for mothers relative to fathers.

The reasons for the gender difference in the amount and nature of parental time with children are complex. Differences in employment patterns of mothers and fathers explain some, but not all, of the difference. However, even these gender differences in employment reflect differences in social roles and behaviours around childrearing, which play out in other ways in family relationships. As a result, even when both parents work full-time hours, mothers are more likely than fathers to take on the primary role of caring for children. As described by Crouter and McHale (2005), it may be that father involvement is of a more optional nature than mother involvement.

Nevertheless, parental employment differences are expected to explain variations in mothers’ and fathers’ time spent with children, and also be key to explaining differences between mothers and fathers. Maternal employment has an overall impact on the time mothers spend with their children, although a one-hour increase in employment is associated with a much smaller reduction in time spent with children (Bianchi, 2000; Bittman, Craig, & Folbre, 2004; Craig, 2007; Nock & Kingston, 1988). While more hours of paternal employment also generally reduce fathers’ time spent with children, one hour of fathers’ employment reduces their time with children by a lesser amount than one hour of mothers’ employment reduces mothers’ time with children (Baxter, 2009; Bittman, 2004; Craig, 2006a, 2006b).

Employed mothers maintain the amount of time actively involved with their children, apparently by limiting the time they spend on less interactive child care or child-free activities (Bittman, 2004; Craig, 2006a, 2006b). Unlike mothers, it does not appear that fathers preserve particular types of father–child time when they work longer hours. Cooksey and Fondell (1996) found that working longer hours reduced the time fathers spent with children while eating meals, reading to them and helping them with homework.

Parental time with children is associated with the scheduling or timing of work, as work within certain times constrains parents’ availability to be with their children (Barnes, Bryson, & Smith, 2006; Brayfield, 1995; Nock & Kingston, 1988; Presser, 2004). This can result in differences in the activities that parents do with children. For example, fathers working between midnight and 9 am have reduced time doing the more physical aspects of child care, while working between 6 pm and midnight reduces the time shared with the child doing entertainment activities (such as going to the movies), watching television, sharing meals and talking (Nock & Kingston, 1988). Working weekends may also have an impact on parent–child time; having a negative effect on weekends, but perhaps a positive effect on weekdays if those who work on the weekends are more available for parent–child time during the week. Using LSAC data, Baxter (2009) found this to be so for fathers who worked on weekends, but not mothers. Other studies have not found much evidence of tradeoffs between weekday and weekend time (Almeida, 2004).

For partnered parents, co-ordinating each person’s work commitments with caring for children may mean that one parent spends more time with children when the other parent works longer hours, beyond any association between their own work hours and time with children. Findings in this regard from other studies are mixed. For example, Bittman (1999) and Sandberg and Hofferth

(2001) found that fathers spend more time with children when the mother is employed, while Nock and Kingston (1988), Pleck and Staines (1985) and Yeung et al. (2001) found fathers' time with children was not affected by the mothers' employment status. Baxter (2009) found that fathers spend more time with children when the mother works full-time hours, compared to when mothers are not employed. Mothers' time with children does not tend to vary with differences in fathers' work hours (Nock & Kingston, 1988; Pleck & Staines, 1985), although Baxter (2009) found that mothers spend more time with children when fathers work the longest hours. Any variations that do exist may be evident in differences in the types of activities done during the time parents and children spend together.

Higher parental education is often found to be positively related to time spent with children and with more intensive parenting (Cooksey & Fondell, 1996; Craig, 2006b; Gauthier et al., 2004; Marsiglio, 1991; Sandberg & Hofferth, 2001; Sayer, Bianchi et al., 2004; Sayer, Gauthier, & Furstenberg, 2004; Yeung et al., 2001; Zick & Bryant, 1996). This effect is often attributed to higher education levels being associated with a stronger belief in the value of parenting and of undertaking developmentally appropriate activities with children.

Other characteristics that may be related to differences in parental time with children are parental age, family size, and age and sex of the child (Bryant & Zick, 1996; Cooksey & Fondell, 1996; Craig, 2006a; Sayer, Gauthier et al., 2004; Yeung et al., 2001).

Data and methods

The Longitudinal Study of Australian Children time use diary

Growing Up in Australia: The Longitudinal Study of Australian Children is conducted in partnership between the Department of Families, Housing, Community Services and Indigenous Affairs (FaHCSIA), the Australian Institute of Family Studies (AIFS) and the Australian Bureau of Statistics (ABS). The study follows two cohorts of children who were randomly selected from across Australia: one infant cohort, aged 3 to 19 months at interview, and the other aged 4 years 3 months to 5 years 7 months at the Wave 1 interview in 2004. The survey contains extensive information about the children, their family and their environment. For a detailed description of the design of LSAC, see Soloff, Lawrence, and Johnstone (2005). This paper uses Wave 1 data.

One of the components of LSAC is a time use diary (TUD). The TUD data were collected for both the infant and the 4–5 year cohorts, but this analysis uses data from just the older cohort. Most of the children in this sample were at school (kindergarten or preparatory year), formal child care or preschool, regardless of their parents' employment status (Baxter et al., 2007; Harrison & Ungerer, 2005).

In the TUD, details of the study child's activities are recorded over two randomly assigned days, one a weekday and one a weekend day. The diaries divided the day into 15-minute time intervals and parents were asked to mark the times during which their child was involved in any of 26 pre-coded activities. The activity details are grouped into a broader classification for use throughout this analysis (Table 1). While other studies were consulted in developing this classification (for example, Yeung et al., 2001), direct correspondence to other studies was not possible, given differences in the underlying data collection framework. To analyse these data, the activity was assumed to last for the full 15 minutes, although it is likely that some activities' duration were shorter than this.

The TUD also collected details of where the child was in each time period. Possible categories were "own home (indoors)", "other person's home (indoors)", "day care centre, playgroup", "other indoors" and "other outdoors". For this analysis, children's attendance at "day care centre, playgroup" was treated as an activity, as part of a category of "social and organised" activities.

For each 15-minute period, information was also collected on who the child was with, defined as being in the same room, or if outside, nearby to the child. Possible categories included with their mother (including step-mother) and with their father (including step-father). These times are referred to as mother–child time and father–child time respectively, and are the focus of this paper. Mother–child and father–child time will overlap to some degree, but this is not considered in this analysis. Because these data only capture co-presence, they do not comprehensively measure the

Table 1 Classification of activities

Activity category	Activity
Personal care	Bathe, dress, hair care, health care. Eating, drinking, being fed. Held, cuddled, comforted, soothed. Crying, upset, tantrum. Being reprimanded, corrected. Destroy things, create mess.
Television	Watching TV, video, DVD, movie.
Achievement-oriented	Colour, look at book, educational game. Read a story, talk/sing, talked/sung to. Being taught to do chores, read, etc.
Exercise	Walk for travel or for fun. Ride bicycle, trike, etc. (travel or fun). Other exercise—swim/dance/run about.
Other play	Listening to tapes, CDs, radio, music. Use computer/computer games. Other play, other activities.
Social and organised	Visiting people, special event, party. Organised lessons/activities. Day care centre, playgroup.
Travel and taken places	Taken places with adult (e.g., shopping). Travel in pusher or on bicycle seat. Travel in a car/other household vehicle. Travel on public transport, ferry, plane.
Sleeping/resting	Sleeping, napping. Awake in bed. Do nothing, bored/restless.

time that parents spend undertaking child care tasks, nor do they capture the degree of interaction between parent and child.¹ Analysing the child’s activity during this parent–child time provides some insight into likely interaction. The analyses of parental time focus on the times during which the child is awake rather than including parental presence during children’s sleep time, which is of less substantive interest.

These data were related to other parental, family or child characteristics collected elsewhere in LSAC. Parental employment details refers to usual work arrangements at the time of other collections, as parental employment arrangements for the diary day are not known.² Parents who worked full-time hours were fairly likely to have worked on the diary weekday but those classified as part-time are likely to include a mix of those who had worked on that day and those who had not.³

The sample: Data source and quality

These data were sourced from Version 2 of the 4–5 year cohort of the LSAC Wave 1 TUD data (LSAC Project Operations Team, 2006). The analysis was restricted to children living with both biological parents, which represented 83% of children in this cohort. The restriction allowed a focus on the effects of both maternal and paternal employment on parental time with children. Further, it removed the possibility that some of the time with mother or time with father was actually time with a non-resident parent.

For the 4–5 year cohort, the TUD response rate, as a percentage of interviewed respondents, was 80%. The TUD sample somewhat over-represented couple families and those with more highly educated parents (Baxter, 2007). Controls for parental education in these analyses help to overcome problems associated with this bias.

A particular problem with the TUD data was that a large number of diaries (65%) had at least one period of missing activity data. Missing activity data occurred when parents recorded that they were not sure what the child was doing or left the activity details blank for a time period. Much of the missing data was related to times children were in non-parental care, including child care centres, but for this analysis, attendance at child care was treated as an activity, so data were considered missing if no activity details were provided and the child was not at child care. During the times parents were present, activity details were less often missing, but there were also missing “who with” data. Including diaries with excessive missing data in estimates of total time deflates those

1 For more detailed studies of the various ways in which parent-child time can be measured, refer to Budig and Folbre (2004)

2 Some details were collected in the Wave 1 interview and others in the self-complete component. In 89% of cases, the diary date was in the same month as the initial interview, and in 10% of cases it was in the following month.

3 According to the Australian Bureau of Statistics (ABS) Working Arrangements Survey, at November 2003, of women employed full-time, 76% worked Monday to Friday. Of women employed part-time, 21% worked Monday to Friday, although another 39% usually worked weekdays only (ABS, 2003).

estimates, so to analyse the “who with” data, diaries were excluded when they had more than 2.5 hours of missing “who with” data (848 diaries). This left 5,111 diaries. A further 130 diaries were excluded because the activity details were missing for more than 2.5 hours of the mother time or father time. This left 2,493 weekday diaries and 2,488 weekend diaries. Of these diaries, 1,304 had some missing “who with” data (although no more than 2.5 hours), and to control for the effect this might have on reporting of total amount of parent–child time, the amount of missing “who with” data was included as a control variable in the multivariate analyses. The multivariate analyses were based on slightly smaller sample sizes because of missing data in the independent variables.

Methods

In this paper, parent–child time is analysed in two ways. One way was to analyse these data by time of day, calculating the proportion of children who were awake and with their mother or their father at any time. These data were also compared to children’s activities by time of day, in order to discuss the overlap between the distributions. The other way in which these data were analysed was by summing the amount of mother–child time and father–child time. In addition to examining this for the total time the child was awake, the parent–child time has been disaggregated according to the children’s activities. These summed data were tabulated and also used in the multivariate analysis, to determine whether certain factors explained differences in the amount of time mothers and fathers spent with their child during specific types of activities.

To identify relationships between family and child characteristics and parent–child time, ordinary least squares (OLS)⁴ were used, adjusting for initial sample design using Stata’s *svy* option. The dependent variables in these analyses were the minutes of mother–child or father–child time, for the child’s total awake time and time undertaking specific activities. This resulted in 8 weekday and 8 weekend models for mothers and also for fathers.

The multivariate analyses controlled for child characteristics (sex and age of child and number of siblings) and family characteristics (parental age, parental education level, hours worked by either parent). Hours worked were entered as categorical variables, with different categories for mothers and for fathers, given differences in their employment patterns. For mothers, part-time hours were disaggregated, such that the categories used were not employed, and employed 1 to 15 hours, 16 to 24 hours, 25 to 34 hours, and 35 hours or more. For fathers, full-time hours were disaggregated further, and the categories used were not employed, and employed 1 to 34 hours, 35 to 44 hours, 45 to 54 hours and 55 hours or more. Education was also entered as a categorical variable. First, parents were classified according to whether they had completed secondary education, then, those who had a bachelor degree or higher were separately identified. Those with other post-school qualifications were coded only according to their secondary school education. In the analyses of mother–child time, maternal education was entered in the model, and in the analyses of father–child time, paternal education was used. Age of parent and age of child were entered as a continuous variables, both centred at the survey mean (35 years for mothers, 38 years for fathers, 57 months for children). Number of siblings was entered as a categorical variable: no siblings, one sibling and two or more siblings.

Sample characteristics

Most fathers were employed full-time—just 5% were not employed and 6% were employed part-time. There was some variation in full-time hours worked, with 36% usually working 35 to 44 hours a week, 30% working 45 to 54 hours and 24% working 55 hours or more. Mothers were, not surprisingly, more likely to be not employed (41%). Another 21% usually worked 1 to 15 hours a week, 15% 16 to 24 hours, 9% 25 to 34 hours and 14% 35 hours or more. Sometimes working on weekends was fairly common (69% of fathers and 33% of mothers).

⁴ OLS models were used instead of Tobit, even though Tobit estimators are sometimes used in the analyses of time use data to allow for those records in which time spent on an activity is recorded as zero. Many time use analysts assert that OLS is sufficient, and actually preferred when zero time spent on an activity is a valid response (Brown & Dunn, 2006; Gershuny & Egerton, 2006; Stewart, 2006). The analyses of those items with a greater amount of zero data will be most affected by the choice of OLS rather than Tobit (see Table A.1 for the percentage of non-zero cases for each activity group). To ensure the results of the analyses were not affected by the choice of OLS, Tobit estimations were also applied for comparison. In general, the relationships between covariates and dependent variables were consistent with those obtained using OLS. These results are available on request.

Looking at parental education, 31% of mothers and 41% of fathers had incomplete secondary education; 34% of mothers and 26% of fathers had completed secondary education; and 35% of mothers and 32% of fathers had bachelor degrees or higher. Some 49% of children in the sample were girls. Most children had siblings (8% were only children, with 53% having one sibling and 39% two or more siblings).

Results

Parent–child time and child activities: Durations

To introduce the parent–child data, this section presents information on the average amounts of parental time spent with children, for children’s total awake time, and disaggregated according to what the child was doing at the time. Comparing the distribution of activities for children across the whole time they were awake to the times they were with their mother or their father, allows an examination of whether mothers’ or fathers’ time with their child tended to be during particular types of activities.

On a weekday, children in couple families were awake for 721 minutes, on average (Table 2). During this time they spent, on average, 406 minutes with their mother (56% of awake time) and 182 minutes with their father (25% of awake time). Note that these times often overlapped, as is evident in the temporal analysis of parent–child time in the next section. On weekends, out of a slightly lesser time awake (710 minutes), the average time with mother was greater (500 minutes, 70% of time awake) as was the average time with father (402 minutes, 57% of time awake). As for weekdays, times spent with mother and father on weekends overlapped. Nevertheless, the gender difference in parental time with children clearly exists for these 4–5 year old children.

Before discussing the distribution of children’s activities, it is worth first pointing out some specifics of these activities.⁵ A large amount of children’s time awake was spent in personal care. This category was predominantly eating and drinking, but also included bathing and dressing and other activities that contributed smaller amounts to the total. On weekdays, children spent a considerable amount of time in social and organised activities. This included child care, preschool and other organised lessons, which were the main contributors on weekdays, although it also included visiting people, which was a greater contributor on weekends. Other activities were more likely on weekends than weekdays; in particular more time was spent in exercise and other play on weekends.

The extent to which children’s activities overlap with the time they are with their parents will now be considered. On weekdays, the distribution of children’s time across their activities was different to the distribution of parent–child time across these activities, because children’s participation in social and organised activities was more likely when parents were not present. On weekdays, social and organised activities made up 33% of children’s time awake, compared to 12% of mother–child time and 9% of father–child time. On the other hand, while children spent 30% of the time they were awake in personal care, 40% of mother–child time and 46% of father–child time was during personal care.

On weekdays, mother–child and father–child times were fairly similarly distributed across children’s activities, even though there was a large difference in the amounts of time mothers and fathers spent with children. The main difference in distributions was that more father–child time was during personal care time and more mother–child time was during “travel and taken places” time.

On weekends also, mothers spent longer with children than fathers, on average, but the distributions of mother–child and father–child time according to the child’s activity were virtually the same. That is, on weekends it did not appear that mothers and fathers allocated their time to children differently, according to what the child was doing. This is to some extent because children do not spend such a large amount of time in social and organised activities on weekends. Comparing the mother–child time to the father–child time for each activity, mother–child time was always higher. The amount of time was most similar on weekends, for exercise activities, for which the amount of mother–child time was 14% higher than the father–child time.

⁵ See Table 1 for a complete description of which of the recorded activities were coded into the groups used here.

Table 2 Parental presence by children's activities, couple families

	Total awake	Personal care	Television	Achievement-oriented	Exercise	Other play	Social and organised	Travel and taken places
Weekday								
Minutes/day								
Total time in activity	721	214	115	117	65	132	236	97
Mother-child time	406	163	82	82	43	82	47	75
Father-child time	182	83	38	39	17	37	17	26
%								
Total time in activity	100	30	16	16	9	18	33	13
Mother-child time	100	40	20	20	11	20	12	18
Father-child time	100	46	21	21	9	20	9	14
Weekend								
Minutes/day								
Total time in activity	710	219	125	111	99	194	104	122
Mother-child time	500	173	85	82	65	125	74	96
Father-child time	402	134	66	61	57	103	61	78
%								
Total time in activity	100	31	18	16	14	27	15	17
Mother-child time	100	35	17	16	13	25	15	19
Father-child time	100	33	16	15	14	26	15	19

Note: Total time in activity calculations exclude diaries with more than 2.5 hours of missing activity data. Children could be doing more than one activity at a time.

Parent-child time and child activities: A temporal perspective

To understand these relationships between parent-child time and children's activities, it is useful to examine these data according to time of day. This section demonstrates the overlap between parent-child time and children's activities, comparing mothers and fathers, weekends and weekdays.

At any time, children were more likely to be with their mother than their father, even on weekends (Figure 1). On weekdays, the difference in mother-child and father-child time would be to some extent due to differences in employment patterns of mothers and fathers. Also, on weekdays, the lower parental presence reflects the child's absence from the home for school or preschool. Weekends may also be affected by parental employment patterns, given that some mothers, and even more fathers, sometimes undertake paid work on weekends.

Figure 2 shows how children's activities were distributed over the day. The distributions were similar on weekdays and weekends, except for participation in social and organised activities, as shown in Table 2. This included child care or preschool on weekdays and was undertaken by many children, especially during the morning to early afternoon. Children's personal care, given the contribution of eating and drinking to this category, occurred largely at mealtimes. The inclusion of bathing and dressing as personal care contributes to higher proportions in the morning and evening. Achievement-oriented activities occurred throughout the day, but were more likely in the evening, probably associated with having a story at bedtime. Watching television peaked in the morning and mid- to late afternoon, continuing into the early evening. For a more detailed description of these patterns, refer to Baxter and Hayes (2007).

Relating these data to the parent-child data in Figure 1 helps to explain the distribution of parent-child time according to children's activities in Table 2. On weekdays, as parents were most likely to be present in the morning (for mothers more so than fathers) and evening, the activities that occurred at those times were over-represented in the parent-child time. For weekends, parent-child time was more evenly distributed over the range of activities, given that weekend parent-child time did not have the strong temporal pattern that was evident on weekdays.

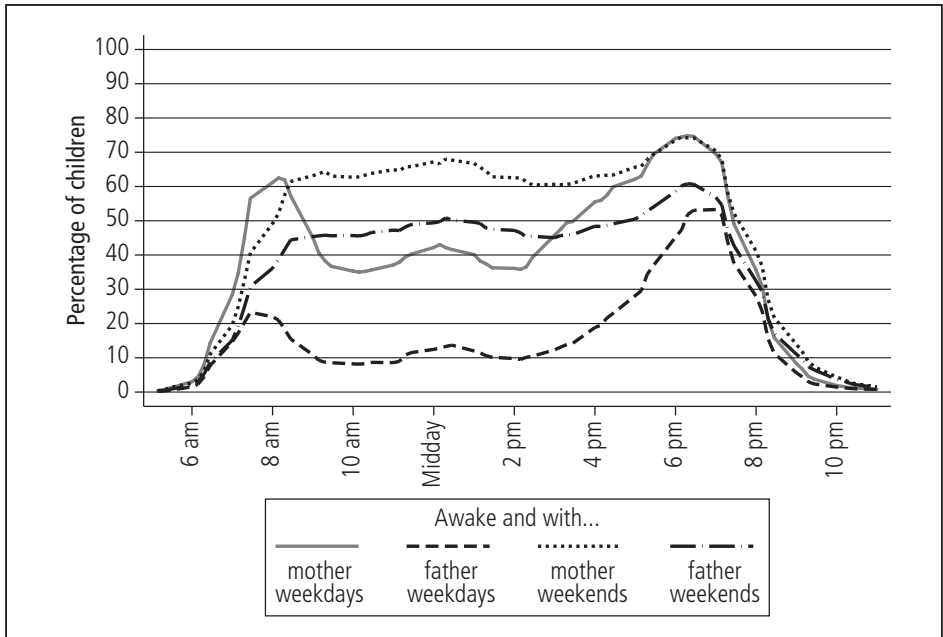
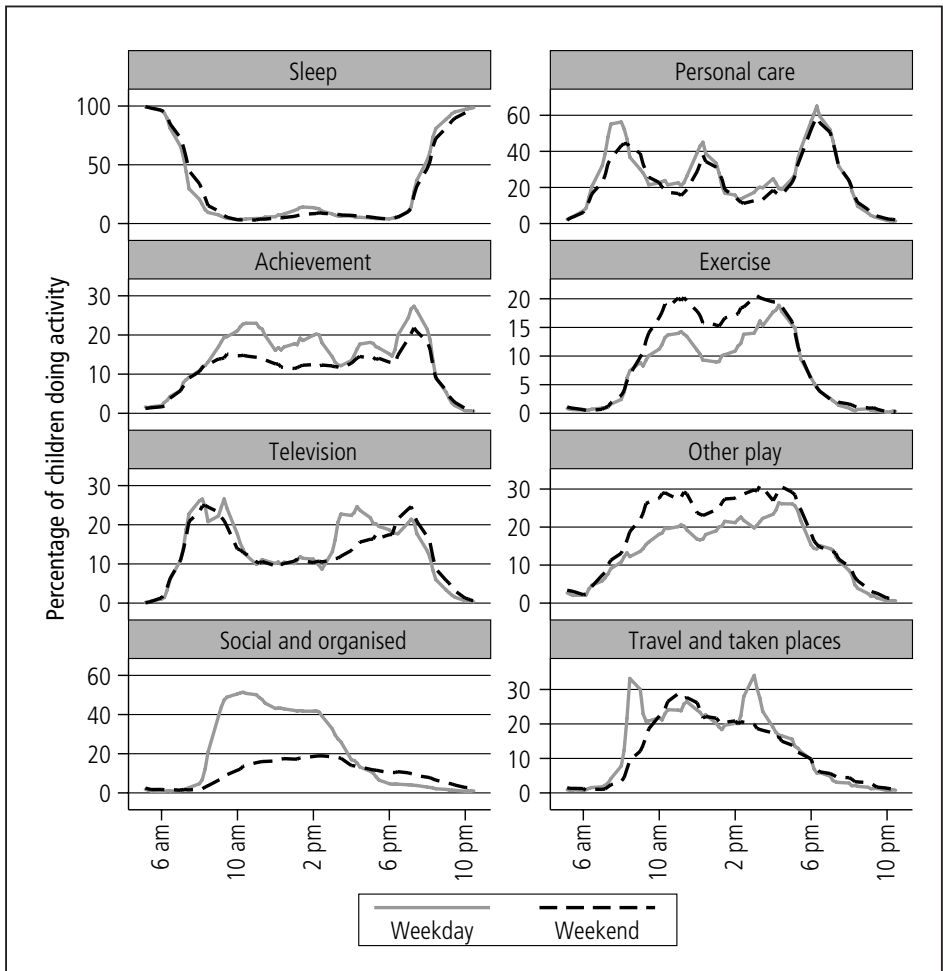


Figure 1 Mother-child and father-child time, by time of day, weekdays and weekends, couple families



Note: There are different scales for the activity groups.

Figure 2 Children's activity patterns, by time of day, weekdays and weekends, couple families

Weekday parent–child time, child activities and paid employment

To further explain differences between mothers and fathers on weekdays, this section examines how parent–child time varied according to hours of parental employment. Parents' weekend time with children is not addressed here, but is addressed in the multivariate analyses.

The weekday data were aggregated to show the average number of minutes of mother–child and father–child time while children were awake within different time periods across the day (Figure 3). These periods are not of equal size, but reflect significant parts of the day with respect to potential parent–child interaction.

Among employed mothers, more hours in paid employment was associated with less mother–child time from morning to late afternoon (see the dark bars in Figure 3a). In the evening, however, there was little indication of work hours making a difference to the amount of mother–child time. Also, mothers who worked less than 16 hours per week appeared to spend no less time with their child than mothers who were not employed.

For fathers, longer paid work hours reduced father–child time at most times (see the light bars in Figure 3b). However, among fathers working full-time hours, there was very little difference in the father–child time in the morning or in the daytime (9.45 am – 3 pm) periods according to hours worked. The greatest difference was evident in the afternoon period, when fathers working shorter full-time hours (or less than this) had more time with their child than those working longer full-time hours. In the evening, there was also a small difference in father–child time for full-time employed fathers, with those working longer full-time hours having less father–child time in this period.

These graphs also shows the relationships between mother's employment and father–child time (the light bars in Figure 3a) and between father's employment and mother–child time (the dark bars in Figure 3b). Father–child time did not vary much by mothers' work hours, although when mothers worked 35 hours or more, father–child time was highest during all time periods. There was a somewhat stronger relationship between mother–child time and fathers' work hours, in general, with mother–child time increasing as fathers worked longer hours. There was, however, very little relationship evident in the evenings.

These relationships help clarify some of the associations between parental employment and the nature of parent–child time that are apparent in the multivariate results discussed below.

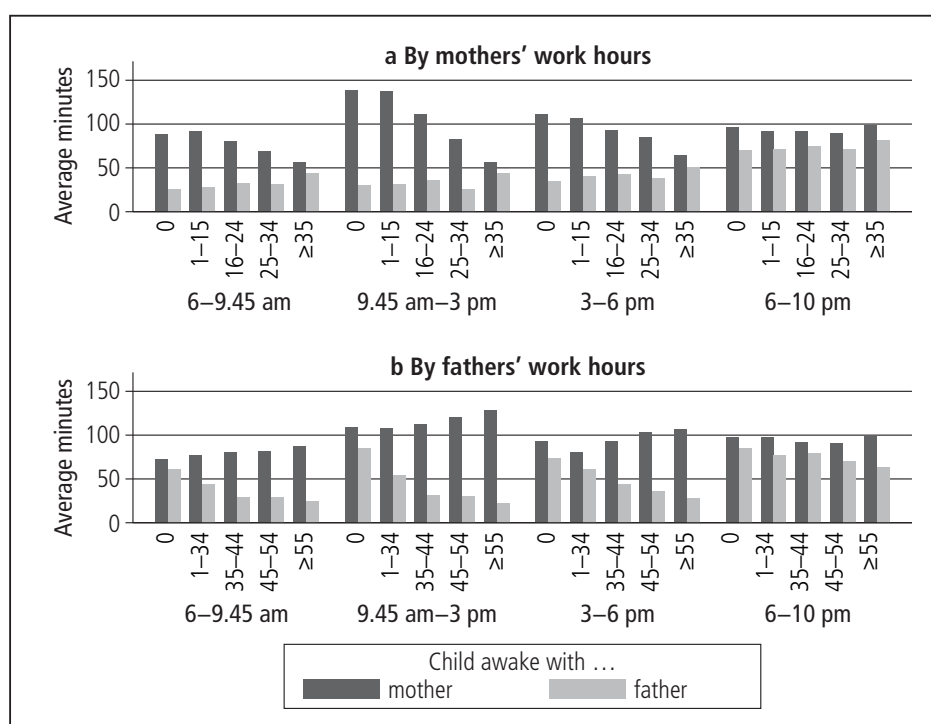


Figure 3 Weekday parent–child time, in specific time periods, couple families, by mothers' and fathers' usual weekly working hours

Multivariate analyses of differences in parent–child time

Multivariate analyses were used to explore the family and child characteristics associated with the amount of and nature of parent–child time. The results for weekday parent–child time are given in Table 3 (mother–child time) and Table 4 (father–child time). These results are discussed firstly by looking at the relationships between parent–child time and parental hours worked, weekend work and education. They are then discussed for weekend time, given in Table 5 (mother–child time; page 12) and Table 6 (father–child time; page 13).

In each of these analyses, it is useful to refer to the constant term to provide a reference point for the amount of parent–child time, in total, and during each activity. This constant term represents the time for a parent who is of average age (average for the sample, that is), and has incomplete secondary education, is in a family in which neither parent works weekends, the mother is not employed and the father works 35 to 44 hours per week, the child is of average age (again, using the sample average) and is a boy who has no siblings.

Weekday parent–child time and hours of paid employment

Even among mothers not in paid employment, there was a considerable portion of the day when the child was not with the mother. Table 2 showed that on weekdays, children were awake, on

Table 3 Mother–child weekday time, children’s awake times, minutes per day, OLS regression coefficients

	Total awake	Personal care	Television	Achievement-oriented	Exercise	Other play	Social and organised	Travel and taken places
Constant	469***	190***	117***	83***	42***	111***	59***	70***
Mother’s hours (ref. = Not employed)								
1 to 15 hours	–7	–11*	–9*	–12*	–2	–2	4	13*
16 to 24 hours	–49***	–26***	–17**	–13	–5	–14*	0	3
25 to 34 hours	–108***	–35***	–28***	–32***	–11*	–38***	0	–16**
35 hours or more	–149***	–55***	–30***	–44***	–18***	–45***	–14**	–18**
Father’s hours (ref. = 35 to 44 hours)								
Not employed	–3	–9	10	2	–3	–4	–3	–8
1 to 34 hours	–2	1	–1	–10	–2	6	2	–6
45 to 54 hours	1	–2	–12***	–6	3	–1	7	3
55 hours or more	29**	8	–2	3	6	4	6	7
Mother works weekends	–3	7	3	1	–1	–3	–8*	–11*
Father works weekends	–1	6	6	6	–1	1	–4	–1
Mother’s education ^a (ref. = Incomplete secondary)								
Complete secondary	1	–1	–9*	8	0	5	3	3
Degree or higher	–20	–3	–22***	22***	0	–2	2	1
Mother’s age, years ^b	1	0	–1	0	0	1**	0	1*
Child’s age, months ^b	–5**	–1*	–2*	–1*	–1	–2**	0	–1
Girl	10	4	–1	14***	–3	–8*	2	3
2 children	–15	–13	–12	–3	7	–10	–11	5
3 children	–19	–16	–12	–7	9*	–14*	–15*	10
Minutes of missing “who with” data	–1***	–1***	–0***	–0***	–0***	–0***	–0***	–0***
Number of observations	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477
R-square	0.136	0.089	0.06	0.054	0.029	0.07	0.021	0.039

Notes: ^a Parents with post-school qualifications other than bachelor degree or higher are coded to their highest secondary school education. ^b Continuous variables centred as follows: age of child at 57 months; age of mother at 35 years. * p < .05, ** p < .01, *** p < .001.

average, for 721 minutes, yet the constant term for mother–child awake time (representing not-employed mothers) was 469 minutes. The difference between these figures (about 250 minutes) is partly related to the child’s absence to attend early education, child care or school. There will have been times during the day that the parent was not recorded as being with the child, but was supervising from close by, remembering that parent–child time was recorded to be when a parent was in the same room as the child, or nearby if outside.

More hours of employment reduced mother–child time on weekdays (Table 3). Mothers who usually worked 35 hours or more per week had 149 minutes less mother–child time on a weekday than not-employed mothers. This number falls well short of the number of minutes such a mother was likely to be at work (a 35-hour week averages to 420 minutes at work a day, not taking into account travel time), but, as discussed above, even not-employed mothers were not with the child the whole day. As work was likely to overlap with times children were absent from home, employed parents could minimise the impact of employment on the parent–child time.

The effect of maternal employment was evident across almost all activities. Mother–child time during social and organised activities was not affected much, but this is not surprising since this activity was more often done without parents being present (Table 2). Personal care time was affected the most. For example, mothers working 35 hours or more spent 55 minutes less with their child during weekday personal care time, on average, compared to mothers who were

Table 4 Father–child weekday time, children’s awake times, minutes per day, OLS regression coefficients

	Total awake	Personal care	Television	Achievement-oriented	Exercise	Other play	Social and organised	Travel and taken places
Constant	192***	89***	45***	33***	12***	43***	18***	24***
Mother’s hours (ref. = Not employed)								
1 to 15 hours	12	4	2	3	4	1	5	3
16 to 24 hours	23*	9	8*	9*	8**	4	1	6
25 to 34 hours	–5	3	–6	0	3	–7	6	–1
35 hours or more	43***	16**	14*	4	6	7	4	10*
Father’s hours (ref. = 35 to 44 hours)								
Not employed	133***	40***	41***	29**	17**	22**	13*	21**
1 to 34 hours	42*	11	3	5	6	13*	9	6
45 to 54 hours	–22*	–8*	–12***	–6*	–2	–6	–1	–1
55 hours or more	–48***	–21***	–15***	–11***	–5	–12**	–4	–6
Mother works weekends	7	3	1	–1	–4	1	–1	–3
Father works weekends	17*	6	7*	4	2	5	0	5
Father’s education ^a (ref. = Incomplete secondary)								
Complete secondary	13	6	2	9**	4	5	2	–1
Degree or higher	–7	5	–10***	11***	–1	–3	2	0
Father’s age, years ^b	0	0	0	0	0	0	0	0
Child’s age, months ^b	–1	0	0	0	0	–1**	1	0
Girl	–8	–2	0	4	–3	–5	0	0
2 children	–13	–9	–6	0	5	–4	–2	0
3 children	–23	–14*	–6	–4	4	–5	–5	–2
Minutes of missing who with ^c data	–1***	–0***	–0***	–0***	–0***	–0***	–0**	–0***
Number of observations	2,477	2,477	2,477	2,477	2,477	2,477	2,477	2,477
R-square	0.09	0.065	0.069	0.044	0.023	0.036	0.017	0.016

Notes: ^a Parents with post-school qualifications other than bachelor degree or higher are coded to their highest secondary school education. ^b Continuous variables centred as follows: age of child at 57 months; age of father at 38 years. * p < .05, ** p < .01, *** p < .001.

not employed. As was seen in Figure 3, this was due to their absence in the mornings and also throughout the day until late afternoon, but was not likely to be related to effects on evening time.

For fathers also, increases in hours of employment reduced the amount of time fathers were with their child on weekdays (Table 4). An additional hour of work had a smaller effect for fathers than for mothers on the total amount of parent–child time on a weekday. For example, the difference between 35–44 hours and 45–54 hours per week, for fathers, was 22 minutes, while the difference between 16–24 and 25–34 hours for mothers was 59 minutes.

The weekday associations between fathers' employment and father–child time were evident across most activities, although the category most affected by working long hours was shared time during the child's personal care. Other categories affected were watching television, doing achievement-oriented activities, and other play. As seen in Figure 3, these differences were likely to relate to less shared time between father and child in the afternoon and evening.

Weekday parent–child time and partner's work hours

As was evident in Figure 3, mother–child time may differ according to fathers' hours of employment, especially if fathers worked very long hours. After controlling for mother's own hours of employment, the coefficients on fathers' hours in Table 3 showed that fathers' hours had a small

Table 5 Mother–child weekend time, children's awake times, minutes per day, OLS regression coefficients

	Total awake	Personal care	Television	Achievement-oriented	Exercise	Other play	Social and organised	Travel and taken places
Constant	526***	181***	98***	75***	39***	122***	77***	109***
Mother's hours (ref. = Not employed)								
1 to 15 hours	7	–10	–8	3	4	3	12	6
16 to 24 hours	17	–7	–6	–5	16**	2	6	14
25 to 34 hours	21	–11	–5	–11	12	6	0	10
35 hours or more	28	–6	7	2	12	14	1	20*
Father's hours (ref. = 35 to 44 hours)								
Not employed	34	13	17	15	21*	29*	0	–7
1 to 34 hours	26	5	3	1	9	14	16	8
45 to 54 hours	3	2	0	–1	5	10	–6	–5
55 hours or more	20	9	–3	5	7	6	–2	0
Mother works weekends	–42***	–7	–7	–7	–5	–8	–10	–14*
Father works weekends	22*	10*	10*	5	9*	10	7	0
Mother's education ^a (ref. = Incomplete secondary)								
Complete secondary	10	5	0	14**	5	4	4	10
Degree or higher	–1	4	–21***	28***	4	8	4	10
Mother's age, years ^b	0	0	–1	1	1	1	–1	1
Child's age, month ^b	0	0	0	–1	0	–1	2**	–1
Girl	11	6	–4	18***	0	–7	2	1
2 children	–31	–9	–3	–9	9	–8	–4	–16
3 children	–54**	–18*	–5	–20**	11	–4	–11	–24*
Minutes of missing "who with" data	–2***	–1***	–0***	–0***	–0***	–1***	–0***	–0***
Number of observations	2,470	2,470	2,470	2,470	2,470	2,470	2,470	2,470
R-square	0.096	0.045	0.041	0.04	0.019	0.034	0.022	0.023

Notes: ^a Parents with post-school qualifications other than bachelor degree or higher are coded to their highest secondary school education. ^b Continuous variables centred as follows: age of child at 57 months; age of mother at 35 years. * $p < .05$, ** $p < .01$, *** $p < .001$.

effect on weekday mother–child time. When fathers worked 55 hours or more, the mother–child time was greatest (29 minutes more than mother–child time when the father worked 35 to 44 hours). Again, the largest effect was on personal care time, although this difference was not significant (an additional 8 minutes of mother–child time during personal care).

After controlling for father’s hours of employment (and other variables), father–child time was somewhat higher when the mother was working 16 to 24 hours (23 minutes more) or 35 or more hours a week (43 minutes more) relative to when she was not employed (Table 4). Inexplicably (although also somewhat apparent in Figure 3), the association did not apply to mothers working 25 to 34 hours a week. When mothers worked 35 hours or more, father–child time was greater during personal care (16 minutes more), watching television (14 minutes more), and travel and taken places time (10 minutes more). When the mother worked 16 to 24 hours, father–child time was greater during watching television (8 minutes), achievement-oriented activities (9 minutes) and exercise (8 minutes).

Weekday parent–child time and working on weekends

Mother–child weekday time did not have a strong association with whether or not either the mother or the father worked weekends. That is, it did not appear that mothers were more likely to spend time with their child during the week to make up for time they might not be available on

Table 6 Father–child weekend time, children’s awake times, minutes per day, OLS regression coefficients

	Total awake	Personal care	Television	Achievement-oriented	Exercise	Other play	Social and organised	Travel and taken places
Constant	459***	151***	80***	62***	43***	108***	72***	95***
Mother’s hours (ref. = Not employed)								
1 to 15 hours	11	–9	–5	–1	3	0	10	7
16 to 24 hours	13	–5	–2	–4	10	–2	1	10
25 to 34 hours	18	–7	–5	–4	3	9	6	12
35 hours or more	–6	–5	4	0	3	0	–8	0
Father’s hours (ref. = 35 to 44 hours)								
Not employed	–5	0	14	7	2	21	6	–8
1 to 34 hours	–8	–8	–11	2	–1	16	7	0
45 to 54 hours	–13	–9*	–8*	–2	4	3	–5	–5
55 hours or more	–33*	–11*	–14***	–6	2	–10	–5	–8
Mother works weekends	17	6	2	1	8	12*	–5	0
Father works weekends	–47***	–9	–1	–2	–6	–11*	3	–15*
Father’s education ^a (ref. = Incomplete secondary)								
Complete secondary	31**	14**	4	14**	7	9	9	10
Degree or higher	43***	20***	–4	27***	16***	22***	4	11*
Father’s age, years ^b	1	0	0	0	0	0	0	0
Child’s age, months ^b	0	0	0	–1	0	–1	2*	0
Girl	–28**	–4	–6	8*	–7*	–16***	0	–11**
2 children	–10	–6	–1	–7	9	1	–8	–2
3 children	–36	–14	–1	–17**	10	–2	–20	–11
Minutes of missing “who with” data	–2***	–0***	–0***	–0***	–0*	–0***	–0***	–0***
Number of observations	2,470	2,470	2,470	2,470	2,470	2,470	2,470	2,470
R-square	0.072	0.041	0.028	0.036	0.022	0.042	0.019	0.027

Notes: ^a Parents with post-school qualifications other than bachelor degree or higher are coded to their highest secondary school education. ^b Continuous variables centred as follows: age of child at 57 months; age of father at 38 years. * p < .05, ** p < .01, *** p < .001.

the weekend. Father–child weekday time was, however, higher when fathers sometimes worked weekends, although only by 17 minutes, and across the range of activities.

Weekday parent–child time and education

Unlike other studies, these analyses did not find higher maternal or paternal education was associated with more parent–child time after controlling other factors. There were, however, relationships between education and parent–child time during specific activities. Most notably, higher education was associated with more shared achievement-oriented time and less shared time watching television. These effects were somewhat stronger for mothers, but were also significant for fathers.

Some of these relationships between parental education and parent–child time in specific activities reflected differences in allocations of children’s time to those activities, according to parental characteristics. Baxter and Hayes (2007) showed that higher parental education was associated with children spending less time watching television and more time doing achievement-related activities.

Parent–child time on weekends

After controlling for weekend paid work, the relationships between hours of employment and weekend mother–child and father–child time were quite weak, and the effects fairly small. Fathers who worked the longest hours (55 hours or more) spent less time with the child on the weekends, which was evident in a smaller amount of time with the child while the child was doing personal care or watching television. There was very little relationship between one parent’s hours of work and the other’s time with the child on the weekend.

Not surprisingly, weekend mother–child time was lower by about 40 minutes when the mother sometimes worked weekends. This was across the range of activities, but was significantly lower during travel and taken places time. Father–child weekend time had a similar association with their working weekends—of a similar magnitude and likewise having the strongest association with a reduction in travel and taken places time.

Maternal education had a non-significant relationship with total mother–child time on weekends, although, as for weekday time, higher education was associated with more shared time doing achievement-oriented activities and less watching television.

For fathers, unlike for weekdays, there was a strong positive association between education and father–child weekend time. Father–child time was higher by 43 minutes for fathers with a degree or higher, compared to fathers with incomplete secondary education, controlling other factors. Higher paternal education was associated with more father–child time while children were doing personal care, achievement-oriented activities, exercise, other play, and travel and taken places. There was no relationship with television time and social and organised activities.

Summary and discussion

Children were at all times more likely to be with their mother than their father, and parents were more likely to be with children on the weekend. Parental presence with children varied across the day. These differences between mothers and fathers and between weekends and weekdays were also evident in the average amount of time children spent with mothers and fathers.

The temporal nature of children’s activities and of the time mothers and fathers shared with their children in part explains the nature of parent–child time. On weekdays, parent–child time was disproportionately during personal care time. This is because parents were most likely to be with their child in the mornings and evenings, at two peaks of personal care time.

On weekends, despite mothers spending more time with the child than the father, the distribution of parents’ time over children’s activities was similar for mothers and fathers. On average, even on weekdays, fathers’ presence was distributed across the range of activities.

A significant factor in explaining parental presence on weekdays is the parent’s own work hours, which relates to parental availability, and shows that time spent with children is constrained by

hours of employment. Some constraint on parental presence with children is imposed by children's participation in other social and organised activities (school, preschool or child care), as indicated by the lower level of parental presence on weekdays, even in families in which the mother is not employed.

Behavioural differences are also likely to explain some of the variation in parental time with children, such that some mothers and fathers actively change their circumstances to allow them to spend more or "higher quality" time with their children. It was expected that parental education might capture some of this effect. These data showed that parental education is important, but more so in relation to activity-specific parent-child time. Higher education is generally associated with less shared time watching television and more shared time doing achievement-oriented activities. This mirrors the relationship between parental education and total amount of time children spend in this activities (Baxter & Hayes, 2007).

Given that these data only define parent-child time based on co-presence of parent and child, they miss out on certain details. It is not possible to know if there is any interaction between those people that are co-present. Further, it is not possible to know what activities the adults were doing at each time—whether their main activity at the time was child care or some other task. These data show that fathers, despite their greater absence from their child's weekday, are still able to share in various aspects of their child's activities and appear to do this without neglecting any particular activity type to a great extent. Unlike other studies, these results did not indicate that fathers were more likely to engage in the "fun" aspects of child care and less likely to engage in the "work" aspects, but perhaps this detail cannot be discerned from these children's time use data.

Another point worth noting is that mother-child time and father-child time were considered separately, whereas in reality, for fathers, their time with children often coincides with times the mother is also available to be with the children. Fathers are much less likely than mothers to spend time alone with their children (Craig, 2006a). Also, because this study was from the perspective of one child, in families with more than one child, the amount of parent-child time reported here may be less than the total amount of parent-child time each parent experiences.

Parental time with children was disaggregated by children's activities with a view to understanding the quality of parental time with children: to differentiate time that might be less developmentally focused from time that might provide opportunities for more engagement or interaction between parents and children. However, it is true that opportunities for development may be present during any of the activities children do while with their parents. For example, much of parental time with children was during personal care time, and while the activities of eating or getting dressed may be in themselves less interesting, parental interaction between children and parents during these activities may provide opportunities to talk and listen to each other, providing the environment to develop relationships and social and cognitive skills. In some families, this will even be true while children are watching television. In fact, it could be expected that parents who are determined to develop relationships with their children and help their children's development will take advantage of whatever time they have with their children to do so.

These LSAC time use data are extremely rich, and offer researchers a vast array of possibilities for analyses of how children spend their days. In addition to the parental presence data used in this analysis, details are also collected in the presence of other adults and/or children, and the location of the child. Further, these details can be linked to the extensive range of data on child and parental characteristics. For example, these results could be related to children's developmental progress and to parenting styles. The longitudinal nature of these data will also enable new analyses of how children's time use and their contexts change as children get older. On the subject of parental time with children, this will enable analyses of whether time spent with mother and time spent with father is associated with different development paths for children.

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Appendix

Table A.1 Percentage doing activities, in total and with parents

	Children doing this activity		Children doing with activity with mother present		Children doing this activity with father present	
	%		%		%	
	Weekday	Weekend	Weekday	Weekend	Weekday	Weekend
Total awake	100	100	96	95	85	90
Personal care	100	100	95	95	82	88
Television	90	90	76	76	52	66
Achievement-oriented	91	84	80	73	60	62
Exercise	67	73	52	58	26	51
Other play	84	89	70	77	48	69
Social and organised	75	57	48	45	24	37
Travel and taken places	89	82	76	71	39	60

