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Original Article

Child and Adolescent Developmental Activities and Time Use in Spain: The Gendered Role of Parents' Work Schedules and Education Levels

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Abstract

This study analyses how the daily activities of children and adolescents differ by parents' work schedules, using data from the '2009–10 Spanish Time Use Survey' (N = 913). Spain is an interesting institutional context for its widespread evening-work culture, combined with inflexible and gendered work-family arrangements. Results imply that parents' time availability, family resources, and gender roles significantly influence children's daily activities. Multivariate linear regression models reveal that parental evening work is detrimental for children's developmental time use, but in ways that differ remarkably across parent's gender and social background. On a given weekday, children with evening-work mothers spend 35 minutes less on educational and social activities with parents and 26 minutes more on unsupervised screen-based activities (TV, mobile devices, computers), compared to children with standard-work mothers. Yet, such effects are confined to evening-work mothers with lower levels of education. By contrast, children with highly educated mothers actively engage in educational activities, reducing screen-based time. Fathers' work schedules do not affect children's time use, while their education levels produce mixed results. Analyses for weekends show a clear 'compensatory' behaviour: on weekends, children whose mothers work evening hours during weekdays substantially increase their time spent in educational activities and parent-child socializing.

Introduction

The way children spend time in daily activities is critical for their human capital and life-course development (Hofferth and Sandberg, 2001). The skills that children acquire from engaging in different daily activities have become particularly relevant in post-industrial societies, with increasingly competitive skill-based labour markets (Esping-Andersen, 2009). Studies find that frequent time spent by children and adolescents on screen-based activities (e.g., TV and mobile devices) is risky for their health, cognitive, or academic outcomes (Booker *et al.*, 2015). By contrast, regular family socializing, reading, and studying stimulate children's cognitive abilities and human capital formation (Hofferth and Sandberg, 2001). Studying children's daily activities is critical, not only for providing sociological evidence on family life but also for

a better understanding of children's potential (dis)advantages and life-course development.

Parents are expected to crucially influence how children spend and experience time. Parents can share time with children in leisure (e.g., socializing, having dinners, and doing educational and recreational activities) or arrange specific extracurricular routines in which children engage independently and by which they acquire specific values, preferences, and skills (Coleman, 1988; Nock and Kingston, 1988; Lareau, 2011; Putnam, 2015). Parents are aware of their important role in children's lives. Yet, differences in parental values, time availability, or resources can strongly influence children's daily activities (Bianchi, Robinson and Milkie, 2006; Gracia, 2018). Previous studies, most of them on the United States, found that privileged children are more active in reading or studying, whereas disadvantaged children spend more time watching TV (Bianchi and Robinson, 1997; Hofferth and Sandberg, 2001). Other studies found that maternal full-time employment is associated with children's and adolescents' TV time and negatively associated with reading or studying time (Mullan, 2009; Wight *et al.*, 2009). To date, however, little is known on how parents' work schedules influence children's daily activities.

In this study, we argue that analysing how parental work schedules interfere with children's daily activities is relevant to understand families and children's lives. Drawing on Presser's (2003) seminal study, we claim that 'when' parents work, rather than just the 'total' amount of working time, influences children's time use. We argue that *parents' evening work hours* (e.g., after 6 pm) has detrimental consequences for child and adolescent developmental time use. From a *time-availability approach*, evening-work parents lack time to orchestrate and supervise children's developmental time use (e.g., family time and screen-based time), as their work schedules overlap with children's time after school hours (Presser, 2003). Other authors argue that evening work is associated with sleep deprivation, stress, or low energy, which leads evening-work parents to lack the *motivation* to arrange children's daily activities (Han and Fox, 2011). Yet, how children's time use differs by parental work schedules remains unclear. For example, evening-work parents could compensate for the costs of evening work by using alternative mechanisms, like externalizing child supervision.

We posit that parental work schedules influence children's time use differently depending on *parents' gender* and *parental education*. Mothers' evening work might be more strongly associated with children's time use, compared with fathers' evening work. Gendered structures and family ideologies lead women to orientate much of their free time to monitor and protect children's daily activities, whereas fathers are more prone to use their free time in the afternoon and evening in activities less related to parental supervision (Treas and Drobnič, 2010; Gracia and Kalmijn, 2016). This fact may lead children to modify their time use from mothers' work schedules more than from fathers' work schedules, as fathers may be relatively less active in supervising the child's activities, irrespective of their work schedules. *Parents' education* is linked to intensive parenting norms (Lareau, 2011) and access to time and monetary resources that facilitate parental involvement (Bianchi *et al.*, 2004; Gracia and Ghysels, 2017). Drawing on previous studies (Hays, 1996; Lareau, 2011), high-educated parents—especially mothers as the key agents of cultural reproduction—may use their resources to schedule children's developmental activities, in case their evening-work constraints impede them to be present for children's supervision.

Our study uses the most suitable and recent data from Spain to analyse how parental work schedules interfere with child and adolescent time use. The '2009/10 Spanish Time Use Survey' (STUS) allows us to analyse how fathers' *and* mothers' daily work schedules relate to children's detailed activities, but also to know with accuracy if these are conducted *with* or *without* parents. We focus on two-parent families with school-aged children and adolescents aged 10–16, as unfortunately data on younger children were not available. Late childhood and adolescence (ages 10–16) is a relevant developmental stage, in which children become increasingly engaged in independent activities, but at the same time remain heavily influenced by parents' daily supervision (Lareau, 2011; Roeters and Gracia, 2016).

Spain presents an interesting *institutional context*. The country exhibits gender inequalities in the home and notable family-unfriendly policies at the state level (Lewis, 2009; Esping-Andersen *et al.*, 2013; Gracia and Esping-Andersen, 2015; García-Román and Cortina, 2016). Spain has a strong institutionalized *split-shift* work schedule system, based on a standard long lunch break, that brings many employed parents to extend work until late in the evening (Gracia and Kalmijn, 2016). Evening work hours were found to be negatively related to parents' time with minor children in Spain (Gutierrez-Domenech, 2010; Gracia and Kalmijn, 2016), while a previous study provided general descriptive evidence on students' time use in Spain (Caparros, 2017). Our study is, to our knowledge, the first exhaustive time-use analysis on how parental work schedules are linked to children's and adolescents' time use, and we do it by systematically addressing differences across parents' gender and socioeconomic background. We do it by focusing on a relevant case for international policy and scientific debates on work–family balance and children.

Analytical Background

Children's Developmental Time Use

Social science research has for a long time been interested in how family contexts influence children's socialization. Studying children's daily practices contributes to classical and ongoing sociological debates on children's personality traits and cultural capital or human capital accumulation (Coleman, 1988; Lareau, 2011; Putnam, 2015; Jæger and Breen, 2016; Kraaykamp and Van Eijck, 2010).

We conceptualize children's time use from a *developmental* perspective. *Socializing activities*—meals, family activities, and (un)structured social relations—are critical for children's social capital accumulation (Coleman, 1988). Children acquire key cognitive and socioemotional skills when parents actively share time with them in family or social activities (Nock and Kingston, 1988; Bianchi, Robinson and Milkie, 2006; Putnam, 2015; Gracia, 2018). Further, children's time in various indoor and outdoor *educational activities*—reading, studying, attending exhibitions, and going to libraries—has been found to foster schooling performance, cognitive skills, or cultural capital (De Graaf, De Graaf and Kraaykamp, 2000; Hofferth and Sandberg, 2001). Children can benefit in different ways from educational activities, either independently or with parents (Lareau, 2011; Gracia, 2015).

Screen-based activities carry risks for child development (Booker *et al.*, 2015). *Watching TV* competes with children's time on key activities like playing sports, studying, or reading (Hofferth, 2010), as 'too much' of it leads to poor academic, cognitive, and health outcomes, especially when parents do not regulate the amount of TV time or content (Nathanson, 2001; Hancox, Milne and Poulton, 2005; Vandewater *et al.*, 2005). *Electronic activities* can also bring developmental risks. In our digitalized world, a certain level of engagement with information and communication technologies (ICTs) is essential to acquire key competences, especially among disadvantaged students (Hofferth and Moon, 2012; Livingstone *et al.*, 2015). Yet, children's electronic time competes with other key developmental activities, and frequent electronic engagement can have health, cognitive, and socioemotional risks, especially when parents are absent to guide or orchestrate these activities (Wang, Bianchi and Raley, 2005; O'Keeffe and Clarke-Pearson, 2011).

Parents' Work Schedules and Children's Developmental Time Use

We expect *parents' work schedules* to play an important role in children's daily activities. Although parents are generally motivated to monitor children's time use (Bianchi, Robinson and Milkie, 2006), parental work schedules can limit parents' capacities to protect children's developmental activities. Following the *time-availability framework* (Presser, 2003), we assume that *evening-work hours* (e.g., 6 pm to 12 am), compared with *standard-work hours* (e.g., 7 am to 6 pm), restrict parents' time availability and energy levels to supervise children's developmental time use after school hours. Consequently, children with evening-work parents might spend relatively low amounts of time *socializing* with parents (e.g., family meals and family socializing) and in *educational activities* (e.g., study and library time), especially regarding those educational activities supervised by parents (e.g., parent–child shared cultural activities). By contrast, children with evening-work parents might have more discretion and autonomy to engage in *screen-based activities* (TV watching and electronic activities), compared with children with standard-work parents. This should be especially true for children's screen-based time without parents, which captures directly the time constraints that are associated to parents' evening work.

H1a: *Children spend less time in socializing and educational activities with parents when parents work evening hours, compared with when parents work standard hours.*

H1b: *Children allocate more time to screen-based activities without parents when parents work evening hours, compared with when parents work standard hours.*

Heterogeneity Across Parents' Gender

The impact of parents' work schedules on children's time use could be moderated by *parents' gender*. Theories suggest that patriarchal values and gender roles lead women to be more active than men in the domestic sphere (Hochschild and Machung, 1989; Hays, 1996; Treas and Drobnič, 2010). Fathers' family involvement and childcare has increased substantially in industrialized countries in recent decades (Kan, Sullivan and Gershuny, 2011; Goldscheider, Bernhardt and Lappegård, 2015). This also applies to Spain (Sullivan, Billari and Altintas, 2014), especially to fathers' interactive or educational activities with older children (Gracia, 2014). Yet, mothers remain more active than fathers in caring for children and orchestrating child-centred activities (Hays, 1996; Bianchi, Robinson and Milkie, 2006; Kan, Sullivan and Gershuny, 2011). Under equal levels of work constraints, men spend more time in child-free leisure and women in child-related activities, hampering women's work, well-being, and health (Mattingly and Sayer, 2006; Roeters and Gracia,

2016; Craig and Brown, 2017). These inequalities are clear also in Spain (García-Román and Cortina, 2016; Gracia and Kalmijn, 2016).

We expect differences in children's time use between evening-work parents and standard-work parents to be stronger for mothers than for fathers. Gender norms lead mothers to disproportionately use their free time to focus on child supervision and fathers on non-child activities. Mothers with low work constraints during the evening would have time availability to engage in intensive parenting practices related to supervising childreńs developmental activities (i.e., ensuring that children do homework, arranging family activities, and regulating their child's screen-based time). Meanwhile, mothers with evening-work constraints might not be as able to engage in such forms of child supervision. *Ceteris paribus*, fathers' involvement in childreńs activities would differ less, irrespective of whether they engage in paid work during the evening, mirroring gendered family norms.

H2a: *The hypothesized negative association between parents' evening work and children's educational and socializing time is stronger for mothers' work schedules than it is for fathers' work schedules.*

H2b: *The hypothesized positive association between parental evening work and children's screen-based time is stronger for mothers' work schedules than it is for fathers' work schedules.*

Heterogeneity Across Parents' Education

Parental education captures intensive parenting norms (Lareau, 2011), parenting resources (Bianchi *et al.*, 2004; Gracia and Ghysels, 2017), and job autonomy (Gallie, 2011). Differences in parents' resources and concerted cultivation norms might bring children in high-educated families to a disproportionate participation in educational activities (e.g., reading, cultural activities, and homework) and to spend moderate amounts of screen-based time (e.g., TV watching) (Bianchi and Robinson, 1997). Maternal education might also be more strongly associated with children's time use, as compared with paternal education. Drawing on the qualitative work of Hays (1996) and Lareau (2011) in the United States and Domínguez-Folgueras *et al.* (2017) in Spain, maternal gatekeeping practices among high-educated mothers lead them to actively organize labour, time, and emotionally intensive developmental routines. The relative importance of mother's education in promoting parent–child time is also found in quantitative studies from the United States (England and Srivastava, 2013) and the United Kingdom (Gracia, 2015).

We hypothesize the educational gap in children's time use to be largest among children with evening-work parents. High-educated parents with evening-work constraints could use their resources to schedule educational activities for children (e.g., private tutors, nannies, and music lessons) or might inculcate values of concerted cultivation to children (e.g., reading and doing homework) to ensure they engage independently in these types of educational activities. By contrast, less-educated parents working evening hours might lack the resources or attitudes to structure children's educational activities, leading children to have more discretion to engage in non-supervised screen-based activities (e.g., TV watching and using mobile devices). Consistent with our analytical framework, this educational gradient by parents' work schedules could be larger among mothers than among fathers. Privileged mothers with evening-work constrains might disproportionately schedule developmental activities for children, motivated by strong maternal gatekeeping practices and resources linked to intensive child-oriented values.

H3a: *Children with high-educated parents spend more time in educational activities and less time in screen-based activities than children with less-educated parents, and differences are stronger for mother's education than for father's education.*

H3b: *Educational differences in children's time use are larger for children with evening-work parents than for children with standard-work parents, and gaps are stronger for mothers than for fathers.*

Data and Methods

Data

The STUS interviewed individuals aged 10 or older to fill diaries on 10-minute activities during the 24 hours of a random day. Mothers *and* fathers from the same household filled a diary for the same day of observation as their children, providing also additional individual and household-level data. Children reported specific activities (e.g., reading, TV time, sports, socializing, using Internet, and video gaming), providing also information on whether other people were present in these activities, including specific information on whether a parent from the household was present. Time-diary data are considered the best statistical tools to analyse how parents and children spend time in everyday life activities (Gershuny, 2000).

The STUS response rate was low (58 per cent), as in similar time-diary surveys. Yet, the survey data collection corrected for selectivity in missing response by

sampling new respondents from groups initially underrepresented (INE, 2011). From the surveyed sample, there was a high diary response (83 per cent). The STUS sample comprises 9,541 households and 25,895 individuals from these households. After restricting the sample to households with full-diary information of children and parents, we obtained 7,412 diary cases. We then restricted the sample to pupil respondents aged 10–16 in two-parent households ($N = 1{,}023$). We dropped 110 cases for having incomplete sociodemographic information on the child, mother, or father. Additional analyses (not shown) reveal that omitted cases were not selected in demographic terms. Unfortunately, we only had one diary of observation per respondent. Our main sample of analyses focus on children reporting diaries for weekdays (Monday–Friday; $N = 593$), but we also conducted additional analyses for a sample with weekend respondents (Saturday–Sunday; $N = 320$).

Dependent Variables

Our *dependent variables* include four activities conducted outside school. The STUS, unfortunately, does not allow us to know whether the child was with the mother or the father, or if both parents were present in each activity. But we can know whether the child reported parental presence for each activity. The four dependent variables were subdivided depending on whether the child reported being 'with' or 'without' a parent: (1) *Socializing activities:* daily minutes allocated to meals, socializing with household members, social time with people outside the home, volunteering, and civic participation; (2) *Educational activities:* daily minutes spent on educational activities outside school time, like reading books, newspaper, or magazines; doing homework; going to the library; attending music or dance lessons; receiving private tutoring; and attending museums, theatre, and music concerts; (3) *TV watching:* daily minutes spent watching TV programmes or videos on the TV; (4) *Electronic activities:* daily minutes on any electronic activity, including video games; using mobile phones, computers, and iPads; being connected to Internet; and chatting with friends or other people through any ICT devices. Supplementary Table S1 provides details on the exact coding of each dependent variable.

Independent Variables

Scholars use different approaches to measure parental work schedules. Some use a *categorical approach* that divides parents' working 'standard' hours (e.g., before 6 pm) from those working 'nonstandard' hours (e.g., after 6 pm; Craig and Powell, 2011). Other authors use a *continuous approach*, measuring the total paid work time on specific schedules (Rapoport and Le Bourdais, 2008). We opted for a *categorical approach* for our main analyses, differentiating between *standard work* (the parent worked from 7 am to 6 pm without having worked 1 hour or more from 6 pm onward) and *evening work* (the parent worked at least 1 hour from 6 pm to 12 am). Yet, we also use a continuous measure of parental work schedules as a robustness check, measuring the daily minutes of paid work during *standard hours* (7 am to 6 pm) and *evening hours* (6 pm to 12 am). Unfortunately, our sample size was small to investigate alternative schedules, such as the *split shift* (Gracia and Kalmijn, 2016), *night shift* (Presser, 2003), and *couple-level* measures. As suggested by Frazis and Stewart (2012), by using work data on a single day, we can provide biased estimates on 'typical' working patterns. We acknowledge this limitation and take the working diary data as a single-day observation.

Parental education was defined separately by mothers and fathers by using three categories based on the maximum achieved level of academic qualification: (1) *Low education*: primary or lower-secondary education; (2) *Intermediate education:* higher-secondary, medium and high vocational, or lower-level tertiary education; (3) *High education:* completed high-level tertiary or postgraduate education. We did not use other measures of social position (e.g., income or social class), as unfortunately these variables had a high incidence of missing data. In some models (interaction effects), we stratified parental education, separating between college- and non-college-educated, as we had small sample sizes for our subgroups.

Controls

We use *parents' total paid work time* as a control measure (Craig and Powell, 2011). For mothers, we use four work categories on the same observation day: (1) did not work, (2) less than 6 hours, (3) 6–9 hours, and (4) more than 9 hours. For fathers, with few part-time workers, we used three categories: (1) did not work, (2) up to 9 hours, and (3) more than 9 hours.[1] We controlled for the child's *gender*, a critical time-use variable (Hofferth, 2010). *Age* is a key measure of children's levels of autonomy (Mullan, 2009); we differentiated between teenagers (aged 13–16) and younger children (10–12). The *number of dependent children* at home can influence parental family strategies related to children's time use (Wight *et al.*, 2009), and so, we accounted for this heterogeneity in our sample, including categories of

0, 1, and 2 or more siblings aged under 18. We also considered if there were *non-parent adults* at home (e.g., residential older siblings and residential grandparents), a relevant demographic group for child supervision and family support (Chiuri and Del Boca, 2010). We finally controlled for the *year period* (quarters) and *specific diary day*, which can affect children's time use (Bianchi and Robinson, 1997).

Analytical Strategy

We refer to *statistical associations* in the analyses, as we face issues of reverse causality or causal inference with our data. While workers with dependent children face constraints to choose their work schedules (Lesnard, 2008), and this is evident in Spain (Gracia, Ghysels and Vercammen, 2011; Gracia and Kalmijn, 2016), parents have discretion to choose certain work schedules based on an intrinsic motivation to supervise children. Thus, we refer to statistical associations. We run ordinary least squares (OLS) regressions for weekdays to measure children's time use, considered to be a robust technique for observational time-diary data (Stewart, 2013). We later conduct linear prediction models interacting parents' education with work schedules. Further, we run additional linear regression models for weekends, using retrospective hourly measures of work time and schedules from Monday to Friday, provided by all working parents in the survey. We finally present some robustness checks.

Results

Summary Statistics and Descriptive Analyses

Table 1 shows the means and standard deviations of variables, separately for the weekday sample (Monday–Friday) and weekend sample (Saturday–Sunday). On weekdays, for *activities with parents*, children spent 70 minutes socializing, 34 minutes watching TV, 22 minutes of educational time, and 12 minutes using electronic devices. For *activities without parents*, respondents spent 82 minutes on socializing time, 49 minutes on educational time, 30 minutes using electronic devices, and 24 minutes watching TV on a random weekday. We observe that 18 per cent of mothers were classified as *evening workers*, 36 per cent as *standard workers*, and 46 per cent *did not work*. As for fathers, 41 per cent were in the *evening-work category*, 35 per cent were classified in the *standard-work shift*, and 24 per cent *did not work*. Regarding education, 25 per cent of mothers had up to basic secondary education (26 per cent among fathers); 60 per cent of mothers had higher secondary, vocational, or lower-tertiary education (58 per cent for fathers); and 15 per cent of mothers had a completed high-tertiary degree or postgraduate studies (16 per cent of fathers). Sample distributions for the weekend sample are similar. Time use on weekends was distributed similarly, yet children spent more time watching TV and less time on educational activities on weekends. We observe similar parental work distributions for the weekly retrospective data, even if the share of evening workers is slightly lower than it is for weekdays.

We contextualize children's and adolescents' time use in Spain with additional analyses, showing the quite 'unique' schedules of Spain. Figure A1 shows a time graph of the sample distribution of children's activities throughout the 24 hours of a random weekday. Figure A2 describes who is with children across the day (Appendix). We observe that children's free time in our leisure activities of interest mostly concentrates during the evening. After schooling hours (typically about 4–5 pm) and in the evening, up to the moment when most children and adolescents are in bed (10–11 pm), is when time with parents becomes more important, as well as time alone and with non-household members.[2]

Main Analyses: Children's Time Use on Weekdays

Table 2 presents the main full OLS models on children's time use. Results are in line with expectations. For *activities with parents*, children with evening-work mothers spent 20 daily minutes less of socializing time with parents ($P < 0.05$) and 15 daily minutes less in educational activities with parents ($P < 0.05$), compared with children with standard-work mothers. Regarding time *without parents*, having an evening-work mother is associated to spending 14 daily minutes more watching TV without parents ($P < 0.05$) and 12 daily minutes more of electronic activities without parents ($P < 0.10$), relative to having a standard-work mother. Fathers' work schedules are in general weakly associated to children's time use.

Table 2 also shows the regression coefficients for *parental education*. For time *with parents*, children with mothers with high-tertiary or postgraduate education spent 18 daily minutes more in educational activities ($P < 0.05$) and 15 minutes less watching TV (not statistically significant) than those with mothers having basic education. By contrast, paternal high education is associated to 10 minutes more of electronic time with parents, compared with having a less-educated father ($P < 0.05$). For time *without parents*, children with highest educated mothers spent 18 minutes less watching TV ($P < 0.05$) and 13 minutes less of electronic time (not statistically significant) than children with less-educated mothers. Again, having a father with the highest

Table 1. Summary statistics and sample distributions

	Weekdays (Monday–Friday)		Weekends (Saturday–Sunday)	
	Mean	*SD*	*Mean*	*SD*
Dependent variables				
Time with parents				
Socializing activities with parents—daily minutes	66.91	*64.41*	61.41	*62.53*
Educational activities with parents—daily minutes	22.33	*45.60*	9.06	*28.95*
Watching TV with parents—daily minutes	34.38	*49.33*	42.81	*59.11*
Electronic activities with parents—daily minutes	11.60	*33.59*	10.44	*31.34*
Time without parents				
Socializing activities without parents—daily minutes	81.69	*86.52*	91.78	*102.79*
Educational activities without parents—daily minutes	48.94	*79.11*	29.84	*63.14*
Watching TV without parents—daily minutes	24.49	*48.68*	21.25	*45.12*
Electronic activities without parents—daily minutes	29.54	*52.75*	30.94	*53.72*
Parental work variables				
Mother's evening-work category (1 hour at least after 6 pm)	0.18		0.15[a]	
Mother's standard-work category (1 hour at least from 7 am to 6 pm)	0.36		0.39[a]	
Mother did not work	0.46		0.46[a]	
Mother worked up to 6 hours	0.12		0.21[a,b]	
Mother worked between 6 and 9 hours	0.31		0.33[a,c]	
Mother worked more than 9 hours	0.10		0.33[a,c]	
Mother's standard work (7 am to 12 am)—daily minutes	173.12	*212.42*	174.63[a]	*182.44*
Mother's evening work (7 am to 6 pm)—daily minutes	56.32	*78.63*	43.23[a]	*48.52*
Father's evening-work category (1 hour at least after 6 pm)	0.41		0.40[a]	
Father's standard-work category (1 hour at least from 7 am to 6 pm)	0.35		0.35[a]	
Father did not work	0.24		0.25[a]	
Father worked up to 9 hours	0.36		0.42[a]	
Father worked more than 9 hours	0.40	*0.49*	0.33[a]	*0.49*
Father's standard work (7 am to 12 am)—daily minutes	343.20	*224.40*	312.95[a]	*202.26*
Father's evening work (7 am to 6 pm)—daily minutes	78.11	*101.42*	67.13[a]	*64.49*
Mothers' and fathers' education				
Mother's completed education: primary or low secondary	0.20		0.19	
Mother's completed education: high secondary or low tertiary	0.65		0.66	
Mother's completed education: high tertiary or postgraduate	0.15		0.15	
Father's completed education: low secondary or below	0.21		0.22	
Father's completed education: high secondary or low tertiary	0.63		0.65	
Father's completed education: high tertiary or postgraduate	0.16		0.15	
Control variables				
Teenager (aged 13–16)	0.52		0.47	
Boy	0.54		0.49	
0 siblings <18 years old	0.33		0.33	
1 sibling <18 years old	0.53		0.50	
2 or more siblings <18 years old	0.14		0.17	
Non-parent adult at home	0.32		0.29	
Diary on January–March	0.25		0.25	
Diary on April–June	0.25		0.25	
Diary on July–September	0.25		0.25	
Diary on October–December	0.25		0.25	
Diary day: Monday	0.20		–	
Diary day: Tuesday	0.20		–	
Diary day: Wednesday	0.19		–	
Diary day: Thursday	0.20		–	
Diary day: Friday	0.21		–	
Diary day: Saturday	–		0.47	

(continued)

Table 1. Continued

	Weekdays (Monday–Friday)		Weekends (Saturday–Sunday)	
	Mean	*SD*	*Mean*	*SD*
Diary day: Sunday	–		0.53	
Mother works on weekend day	–		0.14	
Father works on weekend day	–		0.25	
N	593		320	

[a]Average daily hours reported from Monday to Friday on the same week of observation.
[b]Mothers working up to 7 daily average hours from Monday to Friday on the same week (up to 35 hours per week).
[c]Mothers working more than 7 daily average hours from Monday to Friday on the same week (more than 35 hours per week).

Table 2. OLS: children's daily minutes allocated to four activities on weekdays

	Socializing	Educational	TV	Electronics
Activities with parents				
Mother's evening work (ref: mother's standard work)	−20.14*	−15.31**	−4.86	2.38
	(8.31)	(5.91)	(6.56)	(4.48)
Father's evening work (ref: father's standard work)	−1.11	2.70	3.56	2.02
	(7.20)	(5.12)	(5.68)	(3.88)
Mother's education: high secondary or low tertiary	6.19	6.82	−6.83	2.85
	(8.02)	(5.70)	(6.33)	(4.33)
Mother's education: high tertiary or postgraduate	5.95	17.51*	−14.51	1.10
	(11.58)	(8.23)	(9.14)	(6.25)
Father's education: high secondary or low tertiary	2.20	2.04	7.59	4.34
	(7.99)	(5.63)	(6.11)	(4.18)
Father's education: high tertiary or postgraduate	−1.96	−4.26	5.23	10.48*
	(10.05)	(7.08)	(7.68)	(5.06)
Intercept	82.05***	27.86**	44.69***	12.89
	(12.90)	(9.18)	(10.18)	(8.96)
Observations	593	593	593	593
Adjusted R^2	0.06	0.05	0.02	0.02
Activities without parents				
Mother's evening work (ref: mother's standard work)	8.60	6.17	13.51*	11.66$^+$
	(11.22)	(10.01)	(6.27)	(6.84)
Father's evening work (ref: father's standard work)	6.66	−1.97	−4.64	1.85
	(9.71)	(9.04)	(5.43)	(5.92)
Mother's education: high secondary or low tertiary	−3.56	−4.44	−7.82	−6.92
	(10.84)	(10.10)	(6.06)	(6.61)
Mother's education: high tertiary or postgraduate	−1.35	9.62	−17.56*	−13.69
	(13.64)	(10.57)	(8.74)	(9.54)
Father's education: high secondary or low tertiary	−9.56	2.58	2.52	11.90$^+$
	(10.79)	(9.80)	(6.00)	(6.55)
Father's education: high tertiary or postgraduate	−9.36	−3.17	14.05$^+$	12.05
	(12.56)	(12.32)	(7.54)	(8.74)
Intercept	91.28***	66.10***	21.94*	35.40*
	(17.41)	(16.22)	(9.73)	(20.62)
Observations	593	593	593	593
Adjusted R^2	0.05	0.02	0.06	0.05

Notes: All eight models control for the following variables: mothers' daily paid work time (not working, working up to 6 hours, working between 6 and 9 hours [reference], and working more than 9 hours), fathers' daily paid work time (not working, working up to 9 hours [reference category], and working more than 9 hours), child's age, child's gender, number of dependent siblings in the house, non-parent adult at home, diary day, and year's period (quarters).

Regression coefficients with standard errors on second row in parentheses: $^+P < 0.10$; $^*P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.

education is associated to 14 additional minutes watching TV without parents ($P < 0.10$) and 12 additional minutes of electronic activities without parents (not statistically significant). Consistent with expectations, we find a stronger educational gradient in children's developmental time use for mothers, yet the positive educational gradient in screen-based time that we observe for fathers was not initially expected.

Table A1 presents analyses with *continuous measures* of work schedules (Appendix). Results of Table A1 show similar estimates as those with categorical measures, providing robust evidence on how parental work schedules relate to children's time use.[3]

Interaction Effects: Parental Work Schedules with Educational Level

Figure 1 shows predicted values of children's daily minutes allocated to specific activities, based on linear regression models with *interaction effects* for parents' work schedules and education levels. The models include all the control variables of the study. We use a dummy variable of parents' college versus non-college education, owing to sample size restrictions. We use a unified category of screen-based time, including electronic and TV time together (additional analyses suggest that TV and Internet time capture most of these variations).

Figure 1 shows interesting differences by parental work schedules and education. For *mothers*, regarding time *with parents*, children with a college-educated mother spent 19 minutes less than children with less-educated mothers in socializing with parents among evening-work mothers (60 versus 41). By contrast, a positive education gradient of 9 minutes in educational time with parents is found for children having evening-work mothers (27 versus 18). Educational differences in children's time in screen activities are constant across different maternal work schedules. For activities *without parents*, among children having evening-work mothers, the children of high-educated mothers spent 29 minutes more of socializing time (76 versus 105) and 48 minutes more of educational time (96 versus 48; confidence interval at the 95 per cent level), whereas children of less-educated mothers having evening-work schedules allocated 33 minutes more to screen-based activities (87 versus 54). Educational differences in children's time use by maternal standard work schedules are marginal. For *fathers*, interaction effects show generally minor variations in children's time use.

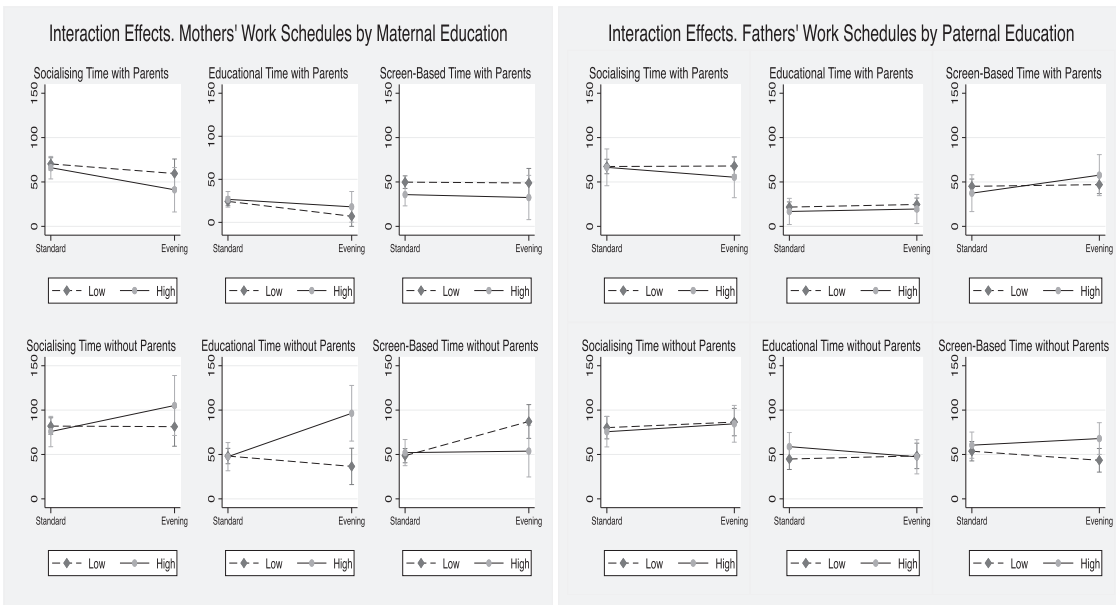

Figure 1. Predicted values. Children's daily minutes on specific activities with interaction effects of parents' work schedules and education levels

Notes: The figure presents interaction effects with predicted values for linear regression models, including confidence intervals at the 95% level. The figure shows separate models. Six models represent an interaction between mothers' work schedules and maternal college education. Six additional models present the interaction between fathers' work schedules and paternal college education. All models control for the following variables: Mothers' Daily Paid Work Time (Not working; Working up to 6 hours; Working between 6 and 9 hours -reference-; Working more than 9 hours), Fathers' Daily Paid Work Time (Not working; Working up to 9 hours -reference category Working more than 9 hours), Other Parent's Education (Partner's Education), Child's Age, Child's Gender, Number of Dependent Siblings at Home, Non-Parent Adult at Home, Diary Day, Year's Period (Quarter).

Still, we observe larger educational differences for evening-work fathers than for standard-work fathers, even if these are never statistically significant. Within evening-work fathers, children with less-educated fathers spend more time socializing with parents, and children with highly educated parents allocate more minutes to electronic activities with parents (58 versus 47) and especially without parents (68 versus 45). Overall, these interaction effects reveal that mothers' (not fathers') work schedules influence children's time use in remarkably different ways across the socioeconomic spectrum.

Additional Analyses: Children's Time Use on Weekends

We conducted additional analyses on weekends to better understand the underlying mechanisms related to *time availability*. On weekends, children and adolescents are not busy with school journeys and parents are less prone to participate in paid work than on weekdays. Parents with difficult work schedules on weekdays may adopt parental strategies of supervising or arranging children's developmental time use on weekends, seeking to compensate for their lack of time availability on weekdays (Hook and Wolfe, 2012; Gracia and Ghysels, 2017).

Table 3 shows the full OLS models for children's time use on *weekends* for a sample of parents and children who completed their diary on a weekend day, using the parents' retrospective weekly work data from Monday to Friday on the same week. We find evidence of a certain weekend compensatory mechanism among children with mothers working evening hours during the week. For activities *with parents*, on a random weekend, children with evening-work mothers spent 18 minutes more socializing with parents ($P < 0.10$) and 13 minutes more of educational time with parents ($P < 0.05$) than children with standard-work mothers. As for activities *without parents*, children with evening-work mothers spend 11 minutes more in socializing and 18 minutes more in educational activities with parents on the weekend, compared with those with a standard-work mother (not statistically significant). For fathers, we find marginal differences by work schedules on children's time use on the weekend, even if paternal evening work is positively associated with electronic activities with parents, with differences of 9 minutes with respect to paternal standard work during the week ($P < 0.05$).[4]

Table 3 also shows an interesting reversed pattern in educational differences in children's time use. Compared with children with fathers having the lowest education, children with fathers with high-secondary education or basic tertiary education allocated 9 minutes more to educational activities with parents ($P < 0.05$) and those with highest educated fathers 14 minutes more ($P < 0.05$). Also, on the weekend, children with less-educated fathers were clearly more active in unsupervised screen-based time than children with highly-educated fathers. By contrast, maternal education was no longer a relevant predictor of children's time use on weekends. These results suggest that different mechanisms might operate regarding educational differences in children's time use under different time-availability settings. Future studies should look at how resources or compensatory behaviours drive educational gradients in children's daily routines.

The findings presented in Table 3 are robust to the measure of work schedules used. Table A2 presents analyses for weekends, but with continuous measures of work schedules, instead of categorical measures. Table A2 shows comparable findings to those presented in Table 3. Results, indeed, imply that children's time use on weekends partly 'compensates' for mothers' evening-work constraints during the week.

Robustness Checks

We conducted additional analyses as robustness checks in three directions. First, we ran analyses restricted to dual-earner couples. Analyses imply that gendered mechanisms in the relationship between parental work schedules and children's time use are not driven by mother's selection outside the labour force (Table A3; Appendix). Second, we compared families with an evening-work mother *and* standard-work father ($N = 34$) with families with a standard-work mother *and* evening-work father ($N = 79$; not shown). When the mother was the one working evening hours, children spent 83 minutes in educational and social activities with parents (compared with 111 minutes when it was the father who worked evening hours) and 65 minutes in screen-based time without parents (compared with 44 minutes when the father was the one working evening hours). These small sample sizes, of course, do not allow us to make any strong claims. Yet, analyses again suggest that children's daily activities differ substantially depending on whether it is the mother or the father working evening hours. Third, we conducted analyses on Internet time use. Results clearly show that the highest participation in Internet use is for children with evening-work mothers, particularly in activities without parents (Table A4). Future studies should further investigate this important question in our digitalized world.

Discussion

This study is the first exhaustive time-use analysis on how parental work schedules influence children's time

Table 3. OLS: children's daily minutes allocated to four activities on weekends

	Socializing	Educational	TV	Electronics
Activities with parents				
Mother's evening work on week (ref: mother's standard work)	18.13^{+}	12.99*	9.75	−5.52
	(10.25)	(5.80)	(12.05)	(6.29)
Father's evening work on week (ref: father's standard work)	3.04	−3.88	7.90	9.15*
	(8.95)	(4.18)	(8.67)	(4.53)
Mother's education: high secondary or low tertiary	14.95	0.61	6.24	8.30
	(10.71)	(4.99)	(10.36)	(5.41)
Mother's education: high tertiary or postgraduate	21.28	−6.42	8.47	−7.05
	(15.59)	(7.27)	(15.08)	(7.88)
Father's education: high secondary or low tertiary	17.06^{+}	9.75*	−3.96	0.50
	(10.22)	(4.76)	(9.89)	(5.16)
Father's education: high tertiary or postgraduate	−6.90	14.12*	2.73	11.70
	(15.20)	(7.09)	(14.71)	(7.68)
Mother's weekend work	−4.63	3.93	−4.74	2.33
	(11.08)	(5.17)	(10.72)	(5.60)
Father's weekend work	4.34	2.96	−0.50	−2.33
	(9.19)	(4.28)	(8.89)	(4.64)
Intercept	44.27**	18.38	26.94	21.17*
	(16.25)	(13.95)	(16.49)	(9.61)
Observations	320	320	320	320
Adjusted R^2	0.02	0.03	0.02	0.01
Activities without parents				
Mother's evening work on week (ref: mother's standard work)	10.58	18.35	1.00	−5.48
	(20.26)	(12.33)	(9.02)	(10.56)
Father's evening work on week (ref: father's standard work)	−9.47	−13.92	−8.37	3.80
	(14.58)	(8.87)	(6.49)	(7.60)
Mother's education: high secondary or low tertiary	−23.90	−10.89	5.00	−1.54
	(17.43)	(10.61)	(7.76)	(9.08)
Mother's education: high tertiary or postgraduate	−24.02	−12.38	−6.92	9.32
	(25.37)	(15.44)	(11.29)	(13.22)
Father's education: high secondary or low tertiary	6.14	5.90	−8.84	−1.41
	(16.63)	(10.12)	(7.40)	(8.67)
Father's education: high tertiary or postgraduate	0.24	5.11	−9.61	−15.13
	(24.74)	(15.06)	(11.01)	(12.89)
Mother's weekend work	26.02	2.95	10.84	−5.98
	(18.04)	(10.98)	(8.03)	(9.40)
Father's weekend work	−27.74^{+}	−14.61	10.39	8.91
	(14.95)	(9.10)	(6.65)	(7.79)
Intercept	130.52***	43.03*	22.87^{+}	18.19
	(27.74)	(16.88)	(12.34)	(14.45)
Observations	320	320	320	320
Adjusted R^2	0.04	0.06	0.02	0.05

Notes: All eight models control for the following variables: mothers' daily paid work time on same Monday-to-Friday week (not working, working up to 7 hours per day on average weekday [reference], and working more than 7 daily hours on average weekday), fathers' daily paid work time on same Monday-to-Friday week (not working, working up to 9 daily hours on average weekday [reference], and working 9 daily hours on average weekday), child's age, child's gender, number of dependent siblings at home, non-parent adult at home, diary day, and year's period (quarters).

Regression coefficients with standard errors on second row in parentheses: $^{+}P < 0.10$; $^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.

use, and it does it by paying particular attention to the mediating role of parents' gender and socioeconomic background. Spain provides a clearly interesting case of study. The Spanish context shows an internationally unique widespread presence of parental evening work (Gracia and Kalmijn, 2016), combined with inflexible and gendered work -family arrangements (Gracia and Esping-Andersen, 2015).

Findings were generally in line with theoretical expectations. Consistent with our initial hypotheses (*H1a* and *H1b*), *parental evening work* is associated with children spending less time in socializing and educational activities with parents and more time in screen-based activities without parents, compared with parental standard-work schedules. Yet, as expected (*H2a* and *H2b*), *maternal* evening work drives variations in children's time use, not *paternal* evening work. Results were robust and consistent when (i) using a range of paid work and demographic variables, (ii) including both categorical and continuous measures of work schedules, (iii) restricting the models to dual-earner couples, and (iv) comparing (in additional analyses) households where only the mother worked evening hours to households where only the father worked evening hours. As hypothesized (*H3a* and *H3b*), *mothers' education* is positively associated with children's time in educational activities and negatively with screen-based time, especially without parents. When college-educated mothers work evening hours, children actively engage in developmental activities without parents (e.g., library, study with private tutors, and extracurricular activities). By contrast, when less-educated mothers engage in evening work, children's time in front of a screen is much higher. Fathers' education provided mixed effects. Paternal education was associated with children increasing screen-based time on weekdays, but also with more educational time and less screen-based time on weekends.

Our findings, first, seem to give tentative support to the *time-availability framework*. Our differentiation between activities *with* and *without* parents provided an interesting test on potential mechanisms related to differences in children's time use. It seems that differences in children's time use are most pronounced in activities that parents can regulate or monitor. This possibility is restricted when evening work does not allow parents to be present in children's daily routines, owing to difficult options of time synchronization (Presser, 2003).[5] Additional analyses on children's time use on *weekends* show that children with mothers working evening hours during the week disproportionately participate in social and educational activities, especially with parents present. We interpret these results in tune with parental (and maternal more explicitly) *compensatory strategies* among Spanish families, seeking to counterweight time constraints on the week by actively supervising children's activities on weekends.

Second, results suggest that *gendered roles* are critical determinants of children's daily activities when looking at parents' work schedules. Our study complements the analyses of Gracia and Kalmijn (2016) on the gendered role of parental work schedules and time use in Spain. Gracia and Kalmijn (2016) showed that, under equal work schedules and family characteristics, fathers spend more time in private leisure, whereas mothers use most of their non-working time to engage in child-centred activities. Mothers would appear to invest most of their free time in childcare, unlike fathers, which leads to gender inequalities in health, well-being, or stress (Hays, 1996; Mattingly and Sayer, 2006; Craig and Powell, 2011; Roeters and Gracia, 2016). By looking at exactly what children do, we can learn more about how fathers and mothers arrange everyday family life. Our study suggests that, when fathers are working in the evening, mothers protect or supervise children's developmental time use (e.g., ensuring that the child does not spend 'too much' time in front of the screen and encouraging children to do homework). Meanwhile, fathers do not seem to protect children's time use to the same extent when they are the only available care providers during the evening. Further studies should address in detail how gender inequalities operate in combination with the work schedules of spouses.

Third, these findings contribute to debates on *educational inequalities*. College-educated families (mothers in particular) with evening-work constraints seem to adopt intensive parenting strategies, benefiting from high monetary resources or social networks. These families structure educational activities with children that do not necessarily require the parents' evening presence (e.g., private tutors and music lessons). By contrast, children with less-educated mothers with similar evening-work constraints focused on less developmental and unstructured screen activities (e.g., TV and mobile devices). Screen-based activities require low monetary, organizational, or cultural capital resources, which less-educated families often lack. It is important to stress that we find relatively minor educational inequalities in children's time use when comparing mothers' working standard hours. These findings add to existing debates on how parents' work schedules impact children's and adolescents' outcomes (Strazdins *et al.*, 2006; Han and Fox, 2011; Han, Miller and Waldfogel, 2010; Li *et al.*, 2014). Our study specifically suggests that educational inequalities need to be considered in the literature on parental work schedules and children and by incorporating how gender and social background intersect in shaping children's daily lives.

Fourth, our study contributes to *work–family* debates in Spain. Many Spanish mothers see evening work as family-unfriendly, as maternal evening work conflicts with the frequency of family activities and parent–child interactions (Gracia and Kalmijn, 2016). Evening work in Spain, particularly for mothers, clashes with children's own developmental activities, mostly affecting disadvantaged children. It is well-known that Spanish mothers face dilemmas between working under inflexible evening hours or not working at all, pushing women and families into difficult decisions (Gracia, Ghysels and Vercammen, 2011). Fathers, irrespective of their work schedules, play a relatively minor role in the daily routines of school-aged children and adolescents. These gender inequalities in child supervision deserve further attention, complementing research on gendered roles and motherhood penalties in parental supervision and care at different life-course stages (Schober, 2011; Sayer and Gornick, 2012; Gracia, 2014; Grunow and Evertsson, 2016).

We must acknowledge four main limitations. First, it is difficult to disentangle the causal impact of parental work schedules on children's time use with our cross-sectional data. We tried to get more evidence on the role of 'time availability' by studying differences between children's time 'with' and 'without' parents and by looking at children's time use on weekends. Better indicators of parents' stress, energy, or motivation, or quasi-experimental designs, might contribute to further understanding the role of parental work schedules in children's and adolescents' daily activities. Second, studies should look at other key indicators of parental background, apart from education, such as income, cultural capital, and social class. Third, we could not disentangle if the child was with the mother or father, nor parents' level of engagement, or analyse couple-level measures of parental work schedules in detail. Still, robustness checks indicate that gender, and not selection, drives the strong differences observed between maternal work schedules and paternal work schedules regarding children's developmental time use. Fourth, our data did not provide information on non-household actors (e.g., educators and non-residential grandparents). Multi-actor time-diary data capturing children's daily social relations are necessary, especially in the Southern European context, where non-residential grandparents play an important role in family life (Chiuri and Del Boca, 2010).

Overall, and despite some limitations, our study connects to relevant sociological debates on how parents' characteristics influence family relations and children's developmental time use. Future studies could complement our work on Spain by adopting a cross-national perspective, following, for example, a similar comparative approach to the one adopted by Hook and Wolfe (2013), Täht and Mills (2016), and Tammelin *et al.* (2017). We hope our study will contribute to ongoing and future debates on how mothers' and fathers' resources, and in particular their work demands and schedules, influence family relations and children's participation in key activities for their present and future well-being.

Notes

1 These control variables produced suitable multicollinearity levels with parental work schedules measures, based on the correlation matrix of parameter estimates or variance inflation factor (VIF) tests.

2 We conducted descriptive analysis of parents' work schedules by level of education (Table S2; online supplements). For the main sample, fathers and mothers with highest education disproportionately participate in paid work and are overrepresented in the evening-work category, especially in the case of mothers. Yet, within employed parents, both mothers and fathers with the lowest education are overrepresented in the evening-work category. This provides interesting contextual information. For accuracy, our multivariate analyses account for educational heterogeneity by using control variables and conducting interaction effects.

3 Table A1 provides additional tests of significance on parents' work schedules for both mothers and fathers. These results are generally comparable to our main analyses based on categorical measures of work schedules.

4 Table 3 includes controls for fathers' and mothers' weekend work. Weekend work is generally not significantly associated with children's time use. Yet, parental weekend work is associated with more TV time allocated without parents. When the father works on the weekend, the child spends substantially less time on educational and socializing activities without parents, whereas maternal weekend work is associated with more socializing time without the parents' presence in the activities.

5 Additional analyses (not shown) suggest that parents' working evening hours are unlikely to report being at home in the same time slots as children. Children with evening-work parents, especially mothers, spend less time with at least one parent, compared with children with standard-work parents. This seems to support the time-availability approach; yet, future studies addressing these questions in detail are needed.

Supplementary Data

Supplementary data are available at *ESR* online.

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Appendix

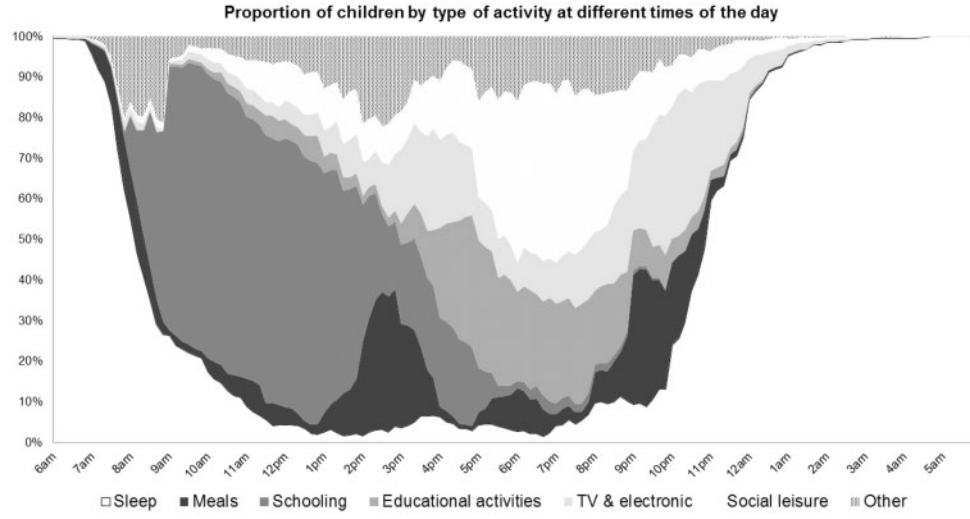

Figure A1. Proportion of children by type of activity at different times of the day.

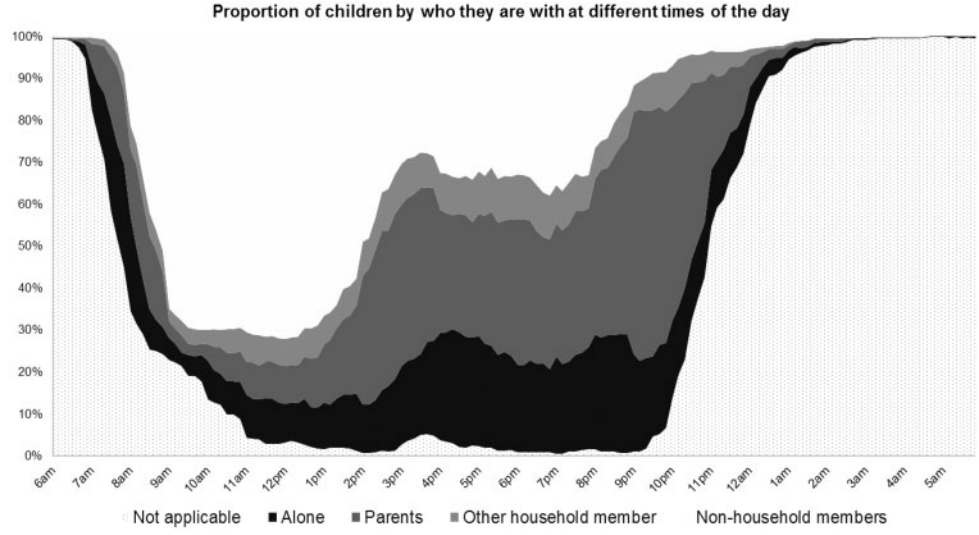

Figure A2. Proportion of children by who they are with at different times of the day.

Table A1. OLS: children's daily minutes allocated to four activities on weekdays—parental work schedules as continuous measures

	Socializing	Educational	TV	Electronics
Activities with parents				
Mother's daily minutes of standard work (7 am to 6 pm)	−0.00	−0.04	−0.05	−0.03
	(0.05)	(0.04)	(0.04)	(0.03)
Mother's daily minutes of evening work (6 pm to 12 am)	−0.07^{+}	−0.09*	−0.03	−0.01
	(0.04)[a]	(0.04)[a]	(0.04)	(0.03)
Father's daily minutes of standard work (7 am to 6 pm)	−0.05	−0.03	−0.01	0.01
	(0.03)	(0.02)	(0.03)	(0.02)
Father's daily minutes of evening work (6 pm to 12 am)	−0.04	−0.02	0.00	0.00
	(0.03)	(0.02)	(0.03)	(0.02)
Mother's education: high secondary or low tertiary	5.51	6.17	−7.18	2.68
	(8.03)	(5.71)	(6.36)	(4.34)
Mother's education: high tertiary or postgraduate	5.31	17.64*	−14.32	1.29
	(11.53)	(8.20)	(9.13)	(6.23)
Father's education: high secondary or low tertiary	1.61	1.70	7.45	4.23
	(7.96)	(5.61)	(6.11)	(4.17)
Father's education: high tertiary or postgraduate	−1.48	−3.38	6.71	10.64*
	(10.11)	(7.12)	(7.76)	(5.29)
Intercept	106.51***	59.20**	68.92**	11.52
	(28.81)	(20.48)	(22.81)	(12.56)
Observations	593	593	593	593
Adjusted R^2	0.05	0.02	0.06	0.06
Activities without parents				
Mother's daily minutes of standard work (7 am to 6 pm)	−0.04	−0.04	0.03	0.06
	(0.07)	(0.07)	(0.04)	(0.04)
Mother's daily minutes of evening work (6 pm to 12 am)	−0.00	−0.03	0.07^{+} [b]	0.09*
	(0.07)	(0.06)	(0.04)	(0.04)
Father's daily minutes of standard work (7 am to 6 pm)	0.03	−0.01	−0.03	0.07*
	(0.04)	(0.04)	(0.02)	(0.03)
Father's daily minutes of evening work (6 pm to 12 am)	0.04	−0.02	0.00	0.05^{+}
	(0.04)	(0.04)	(0.02)	(0.03)
Mother's education: high secondary or low tertiary	−3.13	−5.57	−7.45	−5.43
	(10.89)	(10.15)	(6.09)	(6.60)
Mother's education: high tertiary or postgraduate	−0.72	9.07	−17.74*	−14.03^{+}
	(15.63)	(10.57)	(8.74)	(8.37)
Father's education: high secondary or low tertiary	−9.56	2.84	3.37	11.73^{+}
	(9.78)	(9.80)	(5.99)	(6.50)
Father's education: high tertiary or postgraduate	−9.73	−2.47	14.27^{+}	12.08
	(12.69)	(12.44)	(7.61)	(8.76)
Intercept	93.39*	74.29*	23.69	32.31
	(41.48)	(36.40)	(21.83)	(23.66)
Observations	593	593	593	593
Adjusted R^2	0.05	0.02	0.06	0.06

Notes: Regression coefficients with standard errors on second row in parentheses: $^{+}P < 0.10$; $*P < 0.05$; $**P < 0.01$; $***P < 0.001$.

[a]Indicates statistical differences at the 95 per cent level between work schedules (conducted for the two continuous variables for both mothers and fathers separately). All models control for the following variables: mothers' daily paid work time (not working, working up to 6 hours, working between 6 and 9 hours [reference], and working more than 9 hours), fathers' daily paid work time (not working, working up to 9 hours [reference category], and working more than 9 hours), child's age, child's gender, number of dependent siblings in the house, non-parent adult at home, diary day, and year's period (quarter).

[b]Indicates statistical differences at the level of 90 per cent between work schedules (conducted for the two continuous variables for both mothers and fathers separately).

Table A2. OLS: children's daily minutes allocated to four activities on weekends—parental work schedules as continuous measures

	Socializing	Educational	TV	Electronics
Activities with parents				
Mother's average daily standard work minutes (Monday–Friday)	0.07	0.05*	−0.01	0.02
	(0.05)	(0.02)	(0.05)	(0.03)
Mother's average daily evening work minutes (Monday–Friday)	0.18^{+}	0.15**	0.07	0.00
	(0.10)[a]	(0.05)[a]	(0.10)	(0.05)
Father's average daily standard work minutes (Monday–Friday)	−0.01	−0.02	−0.01	−0.01
	(0.04)	(0.02)	(0.03)	(0.02)
Father's average daily evening work minutes (Monday–Friday)	0.01	−0.03	0.05	0.05
	(0.06)	(0.03)	(0.06)	(0.03)[a]
Mother's education: high secondary or low tertiary	15.56	1.70	5.75	7.84
	(10.75)	(4.98)	(10.43)	(5.44)
Mother's education: high tertiary or postgraduate	21.76	−5.31	7.55	−7.20
	(15.62)	(7.23)	(15.15)	(7.90)
Father's education: high secondary or low tertiary	17.00^{+}	8.76^{+}	−3.13	0.69
	(10.26)	(4.75)	(9.95)	(5.19)
Father's education: high tertiary or postgraduate	−4.80	14.53*	3.63	11.81
	(15.18)	(7.02)	(14.72)	(7.68)
Mother's weekend work	−4.76	3.22	−4.77	2.63
	(11.13)	(5.15)	(10.79)	(5.63)
Father's weekend work	4.19	1.66	−1.07	−3.43
	(9.49)	(4.39)	(9.20)	(4.80)
Intercept	39.74	19.30	34.28	20.13
	(27.02)	(12.50)	(26.20)	(13.67)
Observations	320	320	320	320
Adjusted R^2	0.02	0.03	0.02	0.02
Activities without parents				
Mother's average daily standard work minutes (Monday–Friday)	−0.03	−0.01	0.02	0.09*
	(0.09)	(0.05)	(0.04)	(0.04)
Mother's average daily evening work minutes (Monday–Friday)	0.08	0.12	0.04	0.02
	(0.12)	(0.10)	(0.07)	(0.08)
Father's average daily standard work minutes (Monday–Friday)	−0.06	−0.03	−0.01	−0.06*
	(0.06)	(0.04)	(0.03)	(0.03)
Father's average daily evening work minutes (Monday–Friday)	−0.12	−0.08	−0.06	−0.03
	(0.10)	(0.06)	(0.05)	(0.05)
Mother's education: high secondary or low tertiary	−22.17	−9.39	6.04	−0.93
	(17.49)	(10.68)	(7.81)	(9.02)
Mother's education: high tertiary or postgraduate	−23.14	−11.54	−5.72	9.85
	(25.40)	(15.51)	(11.34)	(13.10)
Father's education: high secondary or low tertiary	3.62	4.46	−10.25	−3.11
	(16.69)	(10.19)	(7.45)	(8.61)
Father's education: high tertiary or postgraduate	−2.36	3.95	−10.76	−16.09
	(24.69)	(15.08)	(11.02)	(12.73)
Mother's weekend work	23.50	1.27	10.04	−6.57
	(18.10)	(11.05)	(8.08)	(9.33)
Father's weekend work	−31.48*	−16.60^{+}	9.10	4.89
	(15.43)	(9.42)	(6.89)	(7.95)
Intercept	166.51***	55.64*	32.58	14.60
	(43.95)	(26.84)	(19.62)	(22.66)
Observations	320	320	320	320
Adjusted R^2	0.04	0.05	0.02	0.07

Notes: Regression coefficients with standard errors on second row in parentheses: $^{+}P < 0.10$; $*P < 0.05$; $**P < 0.01$; $***P < 0.001$.

[a]Indicates statistical differences at the 95 per cent level between work schedules (conducted for the two continuous variables for both mothers and fathers separately). All eight models control for the same variables as presented in Table 3 of the article.

Table A3. OLS: children's daily minutes allocated to four activities on weekdays—dual-earner couples

	Socializing		Educational		TV		Electronics	
Categorical measures of work schedules								
Time with parents (*N*=255)	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*
Mother's evening-work schedules	−17.56^{+}	(9.00)	−15.23*	(7.17)	−3.74	(6.69)	1.70	(5.05)
Father's evening-work schedules	3.77	(8.98)	5.05	(7.16)	6.98	(6.68)	0.44	(5.04)
Mother's education: high secondary or low tertiary	19.00	(14.94)	14.07	(11.91)	−14.96	(11.10)	−5.82	(8.38)
Mother's education: high tertiary or postgraduate	18.38	(17.82)	19.39^{+}	(11.20)	−7.93	(13.25)	−7.54	(10.00)
Father's education: high secondary or low tertiary	2.59	(14.93)	3.21	(11.90)	14.19	(11.10)	−4.73	(8.38)
Father's education: high tertiary or postgraduate	−3.85	(16.64)	−2.00	(13.27)	2.79	(12.37)	−2.30	(9.34)
Intercept	64.48***	(18.92)	17.66	(11.08)	45.85**	(14.06)	15.06	(10.61)
Adjusted R^2	0.02		0.02		0.01		0.03	
Time without parents (*N*=255)	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*
Mother's evening-work schedules	4.33	(12.95)	4.75	(11.12)	12.77	(7.13)	12.34^{+}	(6.98)
Father's evening-work schedules	−1.88	(12.96)	13.36	(11.13)	−6.16	(7.13)	−2.72	(7.99)
Mother's education: high secondary or low tertiary	7.04	(21.42)	−9.93	(18.40)	−10.12	(11.79)	−11.25	(13.20)
Mother's education: high tertiary or postgraduate	9.81	(25.61)	7.99	(22.00)	−19.13^{+}	(11.09)	−26.75*	(13.79)
Father's education: high secondary or low tertiary	−30.11	(21.43)	−18.83	(18.40)	−10.32	(11.79)	20.24	(13.21)
Father's education: high tertiary or postgraduate	−10.11	(23.98)	−4.68	(20.60)	−11.77	(13.20)	20.78^{+}	(11.78)
Intercept	81.14**	(27.22)	57.58*	(23.38)	42.37**	(14.98)	13.66	(10.78)
Adjusted R^2	0.07		0.01		0.05		0.02	
Continuous measures of work schedules								
Time with parents (*N*=255)	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*
Mother's daily minutes of standard work (7 am to 6 pm)	−0.06	(0.04)	−0.03	(0.03)	−0.04	(0.03)	−0.01	(0.02)
Mother's daily minutes of evening work (6 pm to 12 am)	−0.10**	(0.04)	−0.07*	(0.03)	−0.01	(0.03)	−0.01	(0.02)
Father's daily minutes of standard work (7 am to 6 pm)	0.01	(0.04)	0.02	(0.03)	0.04	(0.03)	0.02	(0.02)
Father's daily minutes of evening work (6 pm to 12 am)	0.03	(0.04)	0.00	(0.03)	0.05	(0.03)	0.00	(0.02)
Mother's education: high secondary or low tertiary	22.56	(15.02)	15.58	(12.03)	−8.90	(11.23)	−4.35	(8.47)
Mother's education: high tertiary or postgraduate	20.74	(17.76)	20.57^{+}	(12.22)	−2.50	(13.28)	−5.91	(10.01)
Father's education: high secondary or low tertiary	0.67	(14.81)	1.93	(11.86)	12.78	(11.07)	−6.87	(8.34)
Father's education: high tertiary or postgraduate	−3.24	(16.51)	−1.57	(13.22)	3.82	(12.34)	−4.52	(9.30)
Intercept	80.31**	(28.22)	24.77	(22.60)	37.26^{+}	(21.10)	11.87	(15.90)
Adjusted R^2	0.02		0.01		0.01		0.02	
Time without parents (*N*=255)	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*	Coefficient	*SE*
Mother's daily minutes of standard work (7 am to 6 pm)	0.01	(0.06)	−0.00	(0.05)	0.04	(0.03)	0.03	(0.03)
Mother's daily minutes of evening work (6 pm to 12 am)	0.02	(0.06)	0.03	(0.05)	0.05^{+}	(0.03)	0.06^{+}	(0.03)
Father's daily minutes of standard work (7 am to 6 pm)	−0.02	(0.06)	−0.08	(0.05)	−0.04	(0.03)	0.03	(0.03)
Father's daily minutes of evening work (6 pm to 12 am)	−0.02	(0.06)	−0.02	(0.05)	−0.03	(0.03)	0.02	(0.04)
Mother's education: high secondary or low tertiary	6.11	(21.87)	−7.51	(18.67)	−12.76	(11.98)	−10.08	(13.38)
Mother's education: high tertiary or postgraduate	8.89	(25.85)	7.99	(18.06)	−22.57^{+}	(13.16)	−25.40	(15.81)
Father's education: high secondary or low tertiary	−30.04	(21.56)	−17.87	(18.40)	−9.43	(11.81)	20.05	(13.18)
Father's education: high tertiary or postgraduate	−10.07	(24.03)	−1.18	(20.51)	−11.67	(13.16)	22.02	(14.70)
Intercept	85.17*	(41.08)	98.55**	(35.06)	45.64*	(22.51)	−37.37	(25.13)
Adjusted R^2	0.06		0.02		0.05		0.02	

Notes: Regression coefficients with standard errors on second row in parentheses: $^{+}P < 0.10$; $^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$. All eight models control for the following variables: mothers' daily paid work time (not working, working up to 6 hours, working between 6 and 9 hours [reference], and working more than 9 hours), fathers' daily paid work time (not working, working up to 9 hours [reference category], and working more than 9 hours), child's age, child's gender, number of dependent siblings at home, non-parent adult at home, diary day, and year's period (quarters). For the continuous measures of parental work schedules, differences between the work schedules (within parent) were generally not statistically significant at the 95 per cent level. We are cautious with these differences, as the sample size is quite small. Yet, differences in the magnitude of the coefficients for both the categorical and continuous measures, especially in children's time with parents, resemble in many ways those obtained for the whole sample of analysis (including employed and non-employed parents).

Table A4. OLS: children's daily minutes allocated to Internet activities on weekdays—parental work schedules using categorical and continuous measures

	Internet time[a]	
	With parents	Without parents
Parental work schedules—categorical		
Mother's evening work (ref: mother's standard work)	−2.73	6.55*
	(2.85)	(2.89)
Father's evening work (ref: father's standard work)	−3.14	0.66
	(2.47)	(2.50)
Mother's education: high secondary or low tertiary	1.04	−7.50**
	(2.75)	(2.79)
Mother's education: high tertiary or postgraduate	−0.63	−8.40*
	(3.98)	(4.03)
Father's education: high secondary or low tertiary	0.54	5.96*
	(2.69)	(2.71)
Father's education: high tertiary or postgraduate	0.28	6.62^{+}
	(3.39)	(3.41)
Intercept	5.42	6.73
	(4.43)	(4.48)
Observations	593	593
Adjusted R^2	0.06	0.03
Parental work schedules—continuous		
Mother's daily minutes of standard work (7 am to 6 pm)	0.01	0.03
	(0.02)	(0.02)
Mother's daily minutes of evening work (6 pm to 12 am)	−0.01	0.07***[b]
	(0.02)	(0.02)
Father's daily minutes of standard work (7 am to 6 pm)	0.01	0.01
	(0.01)	(0.01)
Father's daily minutes of evening work (6 pm to 12 am)	−0.01	0.02
	(0.01)	(0.01)
Mother's education: high secondary or low tertiary	0.88	−6.46*
	(2.75)	(2.76)
Mother's education: high tertiary or postgraduate	−0.88	−8.14^{+}
	(3.95)	(3.96)
Father's education: high secondary or low tertiary	0.46	5.91*
	(2.67)	(2.68)
Father's education: high tertiary or postgraduate	−0.27	6.37^{+}
	(3.39)	(3.40)
Intercept	3.80	7.95
	(5.87)	(6.91)
Observations	593	593
Adjusted R^2	0.05	0.05

Notes: Regression coefficients with standard errors on second row in parentheses: $^{+}P < 0.10$; $^{*}P < 0.05$; $^{**}P < 0.01$; $^{***}P < 0.001$.

[a]The STUS 2009/10 provides supplementary data on whether respondents were connected to the Internet for each time slot. Internet use, in our study, is a part of electronic activities (representing about 30 per cent of this time). These analyses look at the total minutes of Internet allocated by respondents on the observation day.

[b]Indicates statistical differences at the 99 per cent confidence level between work schedules in the continuous measure (conducted for the two continuous variables for both mothers and fathers separately). All models control for the following variables: mothers' daily paid work time (not working, working up to 6 hours, working between 6 and 9 hours [reference], and working more than 9 hours), fathers' daily paid work time (not working, working up to 9 hours [reference category], and working more than 9 hours), child's age, child's gender, number of dependent siblings in the house, non-parent adult at home, diary day, and year's period (quarters).