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Paternal Involvement and Children's Developmental Stages in Spain

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Abstract

How does fathering change across children's developmental stages and how do these changes vary by educational levels and women's employment? To investigate this, I use the '2003 Spanish Time Use Survey' (N = 2,941) for a sample of heterosexual couples with children of different ages. I differentiate between *physical* (i.e. feeding, supervising, putting children to bed) and i*nteractive* child care activities (i.e. speaking to, playing with, teaching the child). Fathers' education strongly influences how much fathers participate in physical care in families with preschoolers, a stage in which these activities are particularly important for children's physical, social, and emotional development. For interactive care, a significant education gradient emerges when the youngest child is aged 3 to 5, when the acquisition of complex linguistic, conceptual, and social skills is critical for later school success. Mother's employment significantly influences father's physical child care with preschoolers. This suggests that empowering Spanish women to participate in the labor market promotes gender equity in the household division of child care.

Keywords

Fathering, Child Development, Education, Wife's Employment, Time Use

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Introduction

Research on fathering has risen substantially in recent years (Cabrera et al. 2000; Marsiglio, Amato, Day, & Lamb, 2000). Fathers' child care engagement, accessibility, and responsibility have positive effects on child outcomes (Mullan, Furstenberg & Marmer, 1998; Pleck, 2010). Whereas some parenting activities, like teaching, talking or playing, have been associated with children's cognitive, linguistic, and behavioral skills, others, like feeding or supervising, have been associated with the provision of physical needs (Bianchi, Robinson, & Milkie, 2006). The different skills that children receive from both physical and interactive child care activities have been found to be critical for future life chances and mutually interconnected, especially in early childhood (Heckman, 2006). Additionally, father-child interactions have been found to benefit fathers. A recent longitudinal study (Schindler, 2010) shows that child care involvement is positive for fathers' psychological well-being.

In the literature there is a debate on whether or not a "new father" has emerged in Western countries (Pleck, 2010). Yeung, Sandberg, Davis-Kean, and Hofferth (2001) found that, at least on weekends, a more involved and gender egalitarian father has emerged in the United States. Hook and Wolfe (2011), using time use data from Britain, Germany, Norway, and the U.S., found that fathers' child care time increased substantially during non-working days. Although men's unpaid work has increased together with women's entry in the labor market, women still spend about twice as much time as men in child care activities (Gauthier, Furstenberg, & Smeeding, 2004; Gershuny, 2000). This gender gap widens in the most time-rigid, energy-demanding, and female-typed activities, such as the feeding, bathing, supervising children in routine care, and solo child care (Craig, 2006a).

Paternal involvement also varies across the population. Factors like having gender egalitarian values, working few hours in the labor market, and having a socioeconomically advantaged partner have been found to increase fathers' child care time (Coltrane, 2000). Highly educated fathers are also expected to be more identified with the norms of intensive parenting than their lower educated counterparts (Alwin, 2004; Craig, 2006b). Fathers at the top of the social and educational ladder are disproportionately involved in parenting, which fuels concerns of increasing family polarization and reproduction of inequality in advanced societies (Esping-Andersen, 2009; Lareau, 2003; McLanahan, 2004). Yet, the extent to which socioeconomic factors explain father's child care time across children's developmental stages has received little attention in the literature.

In this study, I argue that examining fathering through the lens of children's early life course provides a better understanding of parenting and child development. Although some studies have used representative data to analyze the association between parenting and children's age (Folbre, Yoon, Finnof, & Fuligni, 2005; Ironmonger, 2004; Marsiglio, 1991; Yeung et al., 2001), few (e.g. Marsiglio, 1991) have investigated variations in fathering across the population. These studies are restricted to the U.S. case, and do not provide conclusive evidence for key variables, like father's education and mother's employment. Following the arguments of Budig and Folbre (2004) and Wang and Bianchi (2009), scholars should study different measures (i.e. physical vs. non-physical care) and households with preschoolers, when childcare demands are highest. Although it is well established that the division of child care is particularly traditional in couples with preschoolers (Craig & Mullan, 2011), little is known about how this may differ by type of families across children's life stages[1]. In

[1] The majority of studies on changes in the gender division of labor when heterosexual couples enter into parenthood have focused on housework activities, excluding child care (see Schober, 2012).

addition, developmental psychologists have provided rich evidence on how parents can influence children's social, emotional, and cognitive skills from infancy to late childhood (Heckman, 2006; Gelman, 2008; Guralnick, 2008; Lamb, 2010; Pleck, 2010; Waldfogel, 2006). Thus, studying the relationship between fathering and children's age is also critical to understand parenting styles and child development.

I use the "2003 Spanish Time Use Survey" (STUS) to study fathers' physical and interactive child care among heterosexual couples. I examine a large cross-sectional sample of couples with children aged 0 to 11 (N = 2,941), which allows me to divide my analyses across three different representative subsamples[2]: one with infants and toddlers (aged 0 to 2); another where the youngest child is a preschooler (aged 3 to 5); a third with the youngest child enrolled in primary school (aged 6 to 11)[3]. Spain is a well-suited case for this study. Although it has weak family policies and a large proportion of heterosexual couples who adopt a traditional division of labor (Esping-Andersen, Boertien, Bonke, & Gracia, 2010), Spain has recently undergone dramatic changes in women's employment and economic power, especially among the college-educated (Gonzalez, Jurado, & Naldini, 2000). For example, between 1980 and 1998, female employment rates in Spain increased by 87% (Sanchez-Marcos, 2003). Moreover, Spanish female employees tend to have very long and inflexible work schedules (Gutierrez-Domenech, 2010). This permits to test under what conditions fathers' child care involvement is responsive to the level of job pressure of their wives. Some recent studies have examined fathers' child care involvement in contemporary Spain (Baizan, Domínguez, & González, 2010; Fernandez & Sevilla-Sanz, 2006). But none has investigated how paternal involvement varies across children's life stages.

My multivariate analyses reveal that father's education has positive effects on physical and interactive child care in households where the youngest child is aged 3 to 5. Further, a strong education gradient is observed for physical care in families with infants and young toddlers. Well-educated fathers in Spain are clearly the most involved in parenting during their children's early life course, when child development depends crucially on active parental inputs (Heckman, 2006). Overall, my empirical analyses show that Spanish fathers with preschoolers increase their physical care time when their wives are employed, a finding with important policy implications[4].

Fathering in Context: Previous Theoretical Perspectives and Research

Parenting is a multidimensional activity that ranges from indirect (low-intensive) to more direct (high-engaged) forms of involvement (Bittman, Craig, & Folbre, 2004; Pleck, 2010). Scholars distinguish physical child care (i.e. feeding, supervising, putting children to bed) and interactive child care (i.e. speaking to, playing with, teaching the child) (Bianchi et al., 2006)[5]. Parental care has been traditionally defined as a "feminine" task, which explains why fathering has been associated with gender egalitarianism (Coltrane, 2004). Although fathers tend to specialize on the "fun" side of child care (Lamb, 2010) and couples with young children have a particularly salient traditional division of labor (Craig & Mullan, 2011),

[2] As pointed out by Ironmonger (2004), the age of children is a key indicator of the quality and quantity of time that parents allocate to child care (Ironmonger, 2004).
[3] 100% of Spanish children aged 3 are enrolled in day care institutions (OECD, 2007). This fact allows parents with children of this age to outsource part of the child care costs.
[4] I use spouse, wife/husband, and partner as synonyms. My sample includes married and cohabiting fathers.
[5] Scholars found this analytical distinction to be useful to study paternal involvement (Pleck, 2010). Yet, physical and interactive activities can be combined and are sometimes ambiguous (i.e. a father that feeds or watches over his toddler is very often engaged in developmental care at the same time).

previous research has found cross-national and socio-economic variations in fathers' child care allocation (Craig & Mullan, 2011; Sayer & Gornick, 2011).

Five general findings in the time use literature provide us with a picture of current trends in parenting in industrialized countries. The first is that, between the 1960s and 2000s, parents increased their average time spent with children (Gauthier, Furstenberg, & Smeeding, 2004; Sayer, Bianchi, & Robinson, 2004a). Second, in the last 30 years, the gender child care gap has been reduced, despite mothers allocating more time to child care than fathers, particularly in physical activities (Bianchi et al., 2006). Third, highly-educated parents have increased their child care time relative to their lower educated counterparts (Gauthier, et al., 2004; Sullivan, 2010), albeit this was found to vary across countries (Gracia, Ghysels, & Vercammen, 2011; Hook & Wolfe, 2011; Sayer, Gauthier, & Furstenberg, 2004b). Fourth, in nations with more gender egalitarian norms, active family-friendly policies, and high rates of female employment, men's participation in child care and housework is higher than in other countries (Craig & Mullan, 2011; Fuwa, 2004; Hook, 2006). Fifth, fathers spend more time with sons than with daughters, especially when playing with children in late childhood (Raley & Bianchi, 2006; Lundberg, Wulff Pabilonia, & Ward-Batts, 2007).

Several theoretical approaches have been applied to study variations in fathers' child care. Drawing on theories from family economics, the "relative resources" approach states that the greater is the comparative advantage of an individual in a couple (i.e. income, human capital), the less time this person will spend in unpaid work (Coverman, 1985; Ermisch, 2003). Women's economic autonomy has been found to predict changes in men's domestic work, especially when female's absolute (rather than relative) earnings were investigated (Gupta, 2007; Schober, 2012). Yet, fathers are motivated to interact with their children (Hallberg & Klevmarken, 2003) and may maximize child care time responding to their own time limitations. Previous studies adopted a "time-availability" approach (Nock & Kingston, 1988; Presser, 1994) to demonstrate that parental care involvement depends more on individuals' (and their spouses') time scarcity than on the spousal comparative advantage. In this sense, women's employment has been found to have a very strong effect on men's allocation to physical child care activities (Roeters, van der Lippe, & Kluwer, 2009).

Gender ideologies and norms are essential for understanding men's and women's behaviors towards domestic work (Craig, 2006a). According to the "doing gender" thesis, individuals are embedded through everyday interactions that define gender-typed traditional roles (West & Zimmerman, 1987). The causal link between gender ideology and unpaid work is difficult to disentangle, simply because work and family decisions are reciprocally connected (Crompton, 2006). Some studies found that men perform traditional male roles in domestic work, even if their wives have relatively high socioeconomic status (Brines, 1994; Evertsson & Nermo, 2004; Hochschild, 1987). But recent analyses with large longitudinal data from Britain and the US show that the household division of labor does respond to partners' relative advantage (Gough & Killewald, 2011; Kan, 2008; Sullivan, 2011). Yet, gender egalitarian behaviors in domestic work were found to be more widespread at the top of the social and educational ladder (Coltrane, 2000). Thus, one might expect that men's share of the couple's physical child care, the most time-demanding and female-typed one, would also be higher among well-educated fathers.

Parental social position has been associated with important differences in parenting styles. In her ethnographic study, Lareau (2003) found that American middle and upper class parents adopt what she calls the parenting style of "concerted cultivation". This is based on a strong engagement in family orchestrated activities that allow children to enhance their cultural,

human, and social capital. In contrast, working-class parents were found to conform to her concept of "accomplishment of natural growth", characterized by a less intensive approach to child-rearing. Well-educated parents are expected to feel closer to the child-oriented norms that have emerged in Western countries (Alwin, 2004; Craig, 2006b). In the majority of countries that have been investigated, highly-educated fathers were found to be more involved in child care than other fathers (Sayer et al., 2004b), including developmental (Bianchi et al, 2006; Marsiglio, 1991) and routine activities (Hook & Wolfe, 2011). Far less is known, however, about how fathers from different social backgrounds interact with their children from infancy to late childhood.

Parenting goes hand-in-hand with changes in children's development and becomes less intensive as children grow. For example, Ironmonger (2004) estimated with Australian data that one-child households with a child under 5 allocate more than 80 weekly hours to parental care, whereas those with children aged 10 to 14 allocate 30 weekly hours. But dramatic "qualitative" changes in parenting also occur across children's developmental stages. In families with infants and young toddlers, physical activities pervade nearly every single parent-child interaction. Although interactive parenting with infants and young toddlers is common, it is usually combined with physical or routine activities, like feeding, bathing or watching over the child. Fathers of infants and young toddlers who do physical child care establish a close affective relationship with the child and are more likely to stimulate a wide range of cognitive and socio-emotional skills (Pleck, 2010; Waldfogel, 2006). In between 3 years of age and entry in primary school (age 6), children become more independent and steadily acquire more complex conceptual, social, and linguistic skills (Gelman, 2008). At this stage, parents' involvement in interactive face-to-face activities, such as teaching, playing, and reasoning with children, is vital for children's later outcomes (Guralnick, 2008). At age 6, children enter primary school and start to achieve more autonomy from parents and frequently engage in everyday relationships with other adults and peers. Even at this stage, parental support in different activities is essential for children's accumulation of social and cultural capital (Bianchi & Robinson, 1997; Yeung et al., 2001). Despite all this evidence, previous studies on how parenting varies across children's ages (e.g., Ironmonger, 2004; Yeung et al., 2001) have not provided a conclusive picture of differences across social and demographic groups.

Theoretical Framework

This study focuses on how residential fathers' involvement in child care diverges by education and women's employment across children's life stages. First, I hypothesize that fathers with higher levels of education have the most gender egalitarian norms and are the most actively involved in the household's childcare responsibilities (Coltrane, 2000; Craig, 2006b), especially in physical activities, which are the most time-inflexible and female-typed ones.

Hypothesis 1a: *The higher is the level of education of the father, the higher the man's share of the couple's physical child care will be*.

Drawing on previous literature (Alwin, 2004; Coleman, 1988; Lareau, 2003; Zick & Bryant, 1996), well-educated fathers should be the ones that have primarily internalized the norms of intensive child-rearing recommended by professionals and "experts". Thus, the strongest education gradient in physical activities should be observed in families with infants and young children, a period in which children's well-being is considered as strongly dependent on parental physical supervision (Waldfogel, 2006). In addition, following Lareau's (2003)

concept of "concerted cultivation", well-educated fathers would be particularly active in fostering their children's talents through their active involvement in specific activities that enhance the best skills for school success. Because children's abilities for psychological reasoning and conceptual learning start to emerge by age 3 (Gelman, 2008; Guralnick, 2008), it would be in families with preschoolers (aged 3-5) and children in their mid-childhood (aged 6-11) where interactive (i.e. games; conversations) and educational father-child activities (i.e. homework, teaching) should mirror the strongest educational differences.

Hypothesis 1b*: A significant education gradient in fathers' physical child care will be observed among couples with a child aged 0 to 5. In interactive activities, this education gradient should be more salient in families where the youngest child is aged 3 or older.*

From a time-availability approach (Presser, 1994), fathers' child care time should respond to women's levels of job pressure. Following Roeters, van der Lippe, and Kluwer (2009), I expect fathers' physical care with preschoolers to be particularly sensitive to the wife's employment. This effect should be especially striking in the father's share of the couple's physical child care, since decisions at the couple level should better capture father's relative child care.

Hypothesis 2: *Female employment has a strong effect on fathers' allocation to physical child care activities, an effect that should be primarily observed through the man's share of the couple's physical child care. This result is expected to be particularly salient in families with young children.*

Methodology

Data

The data used here comes from the "2003 Spanish Time Use Survey" (STUS), a survey from the Spanish Institute of Statistics (INE) and included within the Multinational Time Use Study (MTUS) dataset. Time budget data have for long been considered the best statistical sources to examine how people spend their time on a random day (Robinson, 1985). The STUS contains individual and household information on several socioeconomic and demographic variables. Each respondent was asked to report a 24 hours time use diary for the same day as his/her partner, either on a weekday or a weekend. Diary respondents reported their activities for every 10 minutes along the day, including primary (the main ones) and secondary activities (simultaneous activities). I had to exclude secondary activities from my analyses, since the STUS does not provide information on specific secondary child care activities[6]. The original STUS has a relatively high rate of response (86%). Although the MTUS surveys do not provide longitudinal data, the STUS has a large sample size. This permits us to study families with the youngest child at different life stages, which is the best indicator of parental care allocation in households. I restrict my sample to heterosexual couples with at least one child aged 0 to 11. After excluding cases with missing information, the definitive sample sums a total of 2,941 households. I include three subsamples: 1) families with a child aged 0 to 2 (N = 942); 2) families where the youngest child is aged 3 to 5 (N = 792); 3) families where the youngest child is aged 6 to 11 (N = 1,207).

[6] In exploratory analyses (not shown), I did not find any relevant change when primary and secondary activities were merged. Secondary activities represent a small proportion of fathers' child care time (9% of the total).

Variables

I analyze four dependent variables (see Table 1 and Table 1b): 1) *Father's Share of Couple's Physical Child Care:* a percentage ranging from 0 (the father did 0% of the couple's physical child care) to 100 (he did all the physical care)[7]; 2) *Father's Minutes of Physical Care:* the father's minutes allocated to physical child care; 3) *Father's Interactive Child Care:* the number of minutes that the father allocated to interactive care; 4) *Teaching Children:* it includes fathers who were involved in educational child care in the day of observation (dummy variable).

The explanatory variables of the study are (see Table 1): *Father's Education* (basic; low secondary; high secondary; tertiary), *Mother's Education* (same categories), *Mother's Employment* (not employed; employed less than 30 weekly hours; working between 30 and 37 hours; working full-time). Control variables (see Table 1) include: *Father's Employment* (not employed; working up to 45 weekly hours; employed more than 45 hours); *Son in home* (at least one child of the household is a son); *Outside Help* (whether the household has regular unpaid domestic help); *Number of Dependent Children* (continuous); *Weekend Diary* (whether or not the diary refers to a Saturday or Sunday); *Child 0-4* (couples that have at least one child aged under 5)[8].

Analytical Strategy

I first present descriptive evidence on educational differences in fathers' physical and interactive child care by the age of the youngest child (Figure 1). Multivariate analyses include Ordinary Least Squares (OLS) regressions and Logistic Regressions (for teaching care). I include different models for different subsamples base o the age of the youngest child (Tables 2 and 3). I ran Seemingly Unrelated Regressions (Table 2b) to examine whether highly educated fathers have different employment patterns and leisure behaviors (i.e. lower levels of job pressure; different leisure patterns) that might explain educational variations in child care decisions.

(Table 1)

Results

Descriptive Analyses

Figure 1 presents the relationship between the father's average child care time and the age of the youngest child by level of education. Paternal involvement is negatively associated with the age of the youngest child. The volume of physical care is much higher than the volume of interactive care, particularly in families with preschoolers. One also observes that physical child care decreases with the age of the young child to a much higher extent than interactive activities.

(Figure 1)

Figure 1 shows important educational differences in father's child care time. In families with a child aged 0 to 5, a very strong education gradient is observed, especially for physical

[7] I excluded from this variable cases where both partners reported 0 minutes of physical care. These couples represent 11% of the sample. Not surprisingly, they have older children and are more likely to be dual-earner.
[8] Additional analyses show stronger educational and employment effects on weekdays (results not shown).

activities. College-educated fathers with a child under 2 spent 74 minutes of physical child care, as compared to the 31 of those with primary education. Where the youngest child is aged 3 to 5, this gap is even larger (56 vs. 20). In families with a child under 3, fathers holding a high school diploma are nearly as engaged in physical activities as college-educated fathers and much more engaged than their lower-educated counterparts. However, while college-educated men maintain high levels of involvement in physical care until children enter primary school (6 years), men with high secondary education significantly decrease their volume of physical care when the youngest child is aged 2 to 5. In interactive activities differences are more moderate, but fathers with high secondary and tertiary education are more engaged in these activities than their lower educated counterparts, especially when the youngest child is aged 3 to 5. Although these figures are informative, it is necessary to investigate to what extent the observed educational differences in paternal involvement persist after controlling for other variables.

Multivariate Statistical Analyses

In Table 2, one can observe the results of the OLS regressions for the father's share of the couple's physical child care. I line with expectations (*Hypothesis 1a*), fathers who hold a high school diploma and those with a college degree increased their share of physical child care by 5%, relative to those with primary education (p-value < 0.05). Education increased the male's share of the household physical child care where the youngest child is aged 0 to 2, particularly among fathers with high secondary education. However, it is in families with the youngest child aged 3 to 5 where the strongest educational differential is observed, with college-educated fathers increasing their share of the couple's physical care by 10% (p-value < 0.05). Yet, it is important to stress that the average contribution of Spanish residential fathers to the couple's physical child care time is only 23% (Table 1). In households with college-educated fathers men contribute 30% to this activity, almost the same than men in dual-earner couples (analyses not shown)[9]. This evidence notwithstanding, Spanish highly educated fathers are the most gender egalitarian in the division of child care, even after controlling for mother's and father's employment[10].

Fathers' education is expected to explain parenting styles and ideals on child development (Sayer et al., 2004b). The results of Table 2 for fathers' minutes of physical child care show a significant education gradient that is consistent with my theoretical expectations (*Hypothesis 1b*). As expected, the effect of education in physical activities is significant in families with a child aged 0 to 5, but not where the youngest child is aged 6 to 11. In couples with a child aged 0 to 2, fathers with a university degree increased their physical child care by 22 minutes (p-value < 0.05) and those with high secondary education by 19 (p-vale < 0.1) relative to those with primary education. Where the youngest child is aged 3 to 5, I found the strongest impact of education on physical activities, with college-educated fathers increasing their physical child care by 33 minutes (p-value < 0.001). The magnitude of education on physical care remained strong and virtually unchanged when controlling for employment and demographic variables (models without controls not shown).

[9] Employment variables explain a substantial amount of the variation in fathers' share of the couple's physical child care (Table 2), but so does wife's education. In line with Baizan et al. (2010), I found that the observed effect of mother's education is mainly "spurious", rather than "statistically causal".

[10] Unfortunately, using the STUS I cannot disentangle whether men's physical child care captures variations in gender attitudes or different beliefs towards parenting. I assume that highly-educated fathers have the most gender egalitarian norms *and* are the most identified with the norms of intensive child-rearing (Coltrane, 2000).

Table 3 allows us to interpret how education affects fathers' interactive child care. In line with theoretical predictions (*Hypothesis 1b*), I found a general impact of education in the OLS regressions for all interactive activities, although with smaller impacts than for physical activities. After controlling for other covariates, college-educated fathers with a child aged 3 to 5 did increased their interactive care by 12 minutes (p-value < 0.05) and those with high secondary education by 7 (p-value < 0.05). Logistic regressions revealed that the impact of being a college-educated father on interactive care where the youngest child is aged 3 to 5 is concentrated on teaching (odds = 2,41; p-value 0.01), which shows significant educational differences in line with Lareau's concept of "concerted cultivation"[11]. In contrast, education did not explain changes in interactive care time where the youngest child is aged 6 or older. Perhaps when children are in mid-childhood, educational variations in father-child interactions are not observed in primary activities, but in paternal engagement in children's socio-cultural and educational activities (see Bianchi & Robinson, 1997; Yeung et al., 2001). Future research should investigate this critical sociological question.

(Table 2 / Table 3)

Finally, regarding how the wife's employment affects paternal care involvement, I found statistical effects that are in line with predictions (*Hypothesis 2*). My analyses show a very strong positive impact of mothers' employment on physical child care (Table 2), but not on interactive child care (Table 3)[12]. The effect of wives' employment on husbands' physical care was found to be especially salient for the share of the couple's physical care and among families with a child aged 0 to 5. In these families, one can see a strong increase of at least 10% for all measures of women's employment (p-value < 0.001). These results are consistent with previous studies suggesting that individuals' physical child care is especially responsive to spouses' job pressures (Roeters et al., 2009). In Spain, maternal employment not only increases paternal involvement in child care, but it does especially increase father's involvement in the most time-inflexible and female-typed child care activities.

Discussion

This article contributes to the emerging literature on fathering (Cabrera et al., 2000; Lamb, 2010; Marsiglio et al., 2000) through the analysis of how education and women's employment affect men's child care involvement in Spain. The main novelty of the study is that it examines variations in fathering across children's age, a question that has received little attention in the literature (Marsiglio, 1991). This analytical approach complements previous studies on the quality and quantity of parental care (Bianchi et al., 2006; Hook & Wolfe, 2011; Sayer et al., 2004; Yeung et al., 2004; Zick, & Bryant, 1996) and sheds light on the question of whether men's unpaid work performance has responded to changes in female labor force participation (Bianchi, 2000; Gershuny, 2000; Hook, 2006; Wang & Bianchi, 2009). I analyzed time-diary data for a large representative sample of Spanish residential fathers. Spain has a mixture of coexisting realities that make this country a well-suited case of study, with high levels of traditionalism in the gender division of labor (Esping-Andersen et al., 2010), difficulties of reconciling work and parenting (Gutierrez-Domenech, 2010), and a

[11] OLS regressions with the continuous variable "teaching children" show the same general results than logistic regressions. However, I opted for applying logistic regressions because only 6% of the fathers spent time in this activity and because logistic regressions were more robust than OLS models.

[12] Following previous studies (Craig, 2006; Hook & Wolfe, 2011), I examined fathers' solo child care (results not shown). The variation in the time that fathers allocate to child care without the spouse is also strongly correlated with the wife's employment when children are aged 0 to 5.

recent rapid increase of women's labor market participation, particularly among the college-educated (Gonzalez et al., 2000).

My multivariate statistical analyses give general support to my theoretical predictions. Firstly, after controlling for different variables, Spanish highly educated fathers were found to be significantly more involved in the share of the couple's physical care than their lower educated counterparts, especially in families with preschoolers. I interpret these results in light of previous studies for the U.S., suggesting that well-educated fathers have internalized gender egalitarian norms towards the family more than less educated fathers (Coltrane, 2000; McLanahan, 2004). Indeed, Spanish college-educated fathers were the ones who primarily participated in the share of the most time-demanding and female-typed child care activities of the household.

Secondly, my results show that the impact of wives' employment on fathers' child care varies by activity and children's age. Consistent with previous studies (Roeters et al., 2009), I found that wife's employment is strongly correlated with the husband's allocation to physical child care, but not with his allocation to interactive child care. This effect is especially striking in families with young children, where childcare demands are highest. Even in a country with markedly traditional gender roles, like Spain, men respond to their wives' employment circumstances by substantially increasing their contribution to the most time-demanding child care activities. Although previous studies found important gender inequities in how Spanish dual-earner couples divide their domestic tasks (Carrasco & Dominguez, 2012; Fernandez & Sevilla-Sanz, 2006), my analyses suggest that one important mechanism to achieve a more equitable gender division of child care in Spain would be to create better opportunities for women's employment[13]. This finding has important policy implications and contributes to the broad debate on gender inequalities in European countries.

The third and last key finding of this study lies in the observed interaction between education and children's age in explaining paternal care involvement. In families where the youngest child is younger than 5, an age when children well-being is strongly dependent upon extensive amounts of physical care (Waldfogel, 2006), well-educated fathers were found to be more involved in physical activities. Physical and routine activities can establish a framework of affective father-child relations that enhance children's development, especially in early childhood (Lamb, 2010). For interactive child care, and in particular teaching related activities, a significant education gradient emerged in couples with a child aged 3 to 5, a period in which parental involvement in children's linguistic and conceptual development plays a key role in later cognitive outcomes (Gelman, 2006; Guralnick, 2008). Since parental engagement in early childhood is determinant for future life chances (Heckman, 2006), my results provide evidence in line with those studies arguing that diverging parenting practices have potential effects on increasing socioeconomic polarization (Esping-Andersen, 2009; McLanahan, 2004; Lareau, 2003). As it is assumed in the demographic literature (McLanahan, 2004), Spanish fathers with high levels of education appear to be those who have primarily internalized contemporary norms on intensive child-rearing. Whereas the American literature has generally assumed that educational variations in child-rearing (particularly among mothers) primarily lie in developmental child care (Bianchi et al., 2006), recent cross-national studies show that this gradient for fathers is stronger in physical activities (Craig & Mullan, 2011; Gracia et al., 2011; Hook & Wolfe, 2011). My study

[13] Women in Southern Europe undertake the lion's share of domestic work, receive weak institutional support to balance paid and unpaid work, and are less likely to be employed than women in other Western European countries (González et al., 2000; Esping-Andersen, 2009).

suggests that the mechanisms through which education explains different types of paternal involvement need to be understood considering variations across children's developmental stages.

To obtain a wider picture of the robustness of my findings, it is useful to analyze the Seemingly Unrelated Regressions for child care, paid work, and leisure. In Table 2b one observes that college-educated fathers with preschoolers allocated less time to paid work than fathers with primary education, though these effects were not statistically significant. Yet, the college-educated, instead of increasing their leisure time, increased their primary child care. After controlling for socioeconomic and demographic variables, college-educated fathers increased their child care time by 33 minutes in relation to the less educated (p-value < 0.001). In contrast, the model for leisure time shows no educational differences whatsoever. Because I do not find significant educational variations in paid work time, I assume that I capture key educational differences in parenting priorities. Yet, access time-diary data with information on family preferences is an important item for future surveys.

My analyses show that Spanish fathers with at least one son in their households spent significantly more time in child care than those without sons, including interactive (for children aged 0 to 11) and physical care (for children aged 3 to 5). These results are in line with previous studies (Bonke & Esping-Andersen, 2011; Lundberg et al., 2007; Raley & Bianchi, 2006). An interesting agenda for future research would be to examine whether this gender-typed fathering has an effect on the intergenerational transmission of gendered norms and behaviors[14].

Two important caveats in this study should be mentioned. A first caveat deals with the lack of representative longitudinal time-diary data. Therefore, I cannot study changes in families with the existing cross-sectional time use surveys. However, because the age of the child has been considered a key indicator of parental care engagement (Ironmonger, 2004), constructing subsamples based on this criterion appears to be the best possible analytical strategy for my empirical purposes[15]. The second limitation of my study is the fact that child care is both household work and a gendered nurturing activity (Craig, 2006b). The impact of education on fathers' physical care can capture simultaneously ideals on child development and gender ideologies. Nonetheless, using two different dependent variables on physical care minimizes this problem of misinterpretation. One outcome captures the "quantity", namely the focus of the father on his child's physical development (Pleck, 2010). A second outcome captures the "relative" contribution to physical care, namely the relative female-male fairness in physical child care. Yet, related analyses should be replicated with other data. Future studies would improve our knowledge on parenting even more, should we have data on family preferences, attitudes, and longitudinal information.

[14] With Danish time-diary data, Bonke and Esping-Andersen (2011) found that the "son-effect" on fathers' child care time is more salient among low-skilled fathers than among the high-skilled. I explored this with the STUS, but found no social group differential in this regard.

[15] I ran models after dividing my sample by whether or not there was one child in each age-group category. In general, these analyses were consistent with the presented tables. I decided to present the statistical models based on the age of the youngest child, given that this approach captures well my analytical objectives.

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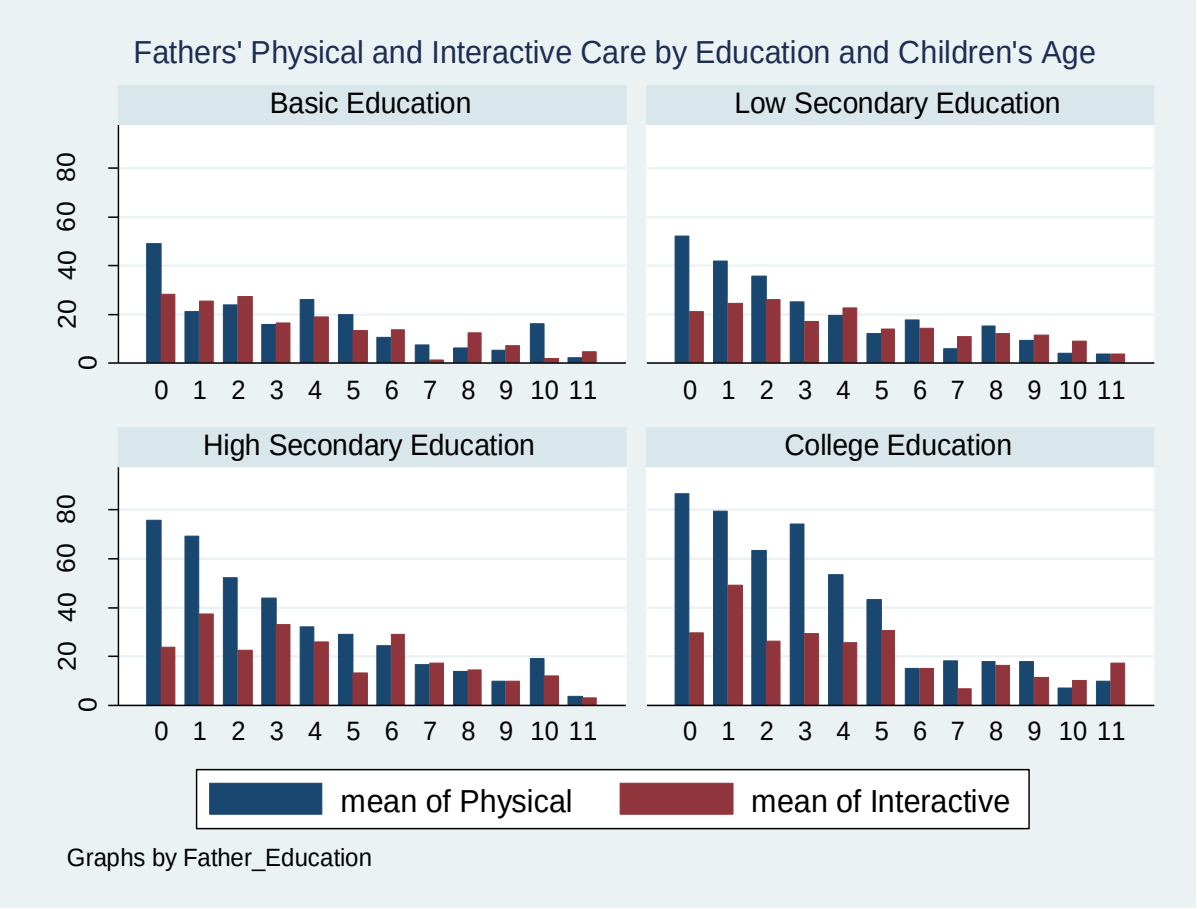
Table 1. Summary of Variables. Means and Standard Deviation

Dependent Variables	*Measure*	*Mean*	*S.D.*
Father's Minutes of Physical Child Care	Continuous	38,59	62,57
Father's Share of Couple's Physical Child Care (%) (a)	Continuous	22,75	27,76
Father's Minutes of Interactive Child Care	Continuous	19,62	39,47
Father's Teaching and Homework with	Dummy	0,06	0,23
Independent Variables and Controls			
Father Basic Education	Categorical	0,13	0,33
Father Low Secondary Education	Categorical	0,43	0,49
Father High Secondary Education	Categorical	0,24	0,43
Father Tertiary Education	Categorical	0,20	0,40
Mother Basic Education	Categorical	0,12	0,32
Mother Low Secondary Education	Categorical	0,43	0,50
Mother High Secondary Education	Categorical	0,22	0,41
Mother Tertiary Education	Categorical	0,23	0,42
Father Unemployed/Inactive	Categorical	0,04	0,20
Father Working Standard Full-Time	Categorical	0,92	0,27
Father Working > 45 Hours in Random Week	Categorical	0,04	0,20
Mother Unemployed/Inactive	Categorical	0,46	0,50
Mother Working Short Part-Time (< 30 Hours)	Categorical	0,12	0,32
Mother Working Long Part-Time (From 30 to 37 Hours)	Categorical	0,11	0,32
Mother Working Full-Time (> 37 hours)	Categorical	0,31	0,46
Son in the Household	Dummy	0,69	0,46
Number of Dependent Children at Home	Continous	1,78	0,64
Household's Outside Help	Dummy	0,36	0,48
Child Aged 0 to 4	Dummy	0,51	0,50
Weekend Diary	Dummy	0,34	0,48
N = 2,941			

Source: "2003 Spanish Time-Use Survey" (INE; Spanish National Institute of Statistics)
(a) This variables has 2,628, excluding cases in which none of the partners did physical child care.

Figure 1. Education Gradient in Fathers' Minutes of Child Care by the Age of the Youngest Child



Source: "2003 Spanish Time use Survey"

Note: Y axis (Minutes of Child Care Time) and X axis (Age of the Youngest Child)

Table 2. OLS Regressions. Fathers' Share of the Couple's Physical Care and Minutes of Phyical Care by Children's Age

	Share of Physical Child Care Time												Minutes of Physical Child Care											
	Child 0-11			Child 0-2			Child 3-5			Child 6-11			Child 0-11			Child 0-2			Child 3-5			Child 6-11		
	Coeff	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*	
Low Secondary Educ.	-1,3	1,7		-0,1	2,6		-3,6	3,1		0,2	3,1		-0,5	3,6		2,3	8,7		-5,4	6,8		1,7	3,7	
High Secondary Educ.	5,0	1,9	*	6,1	2,9	*	4,6	3,5		5,4	3,6		10,3	4,1	*	18,8	9,8	+	9,1	7,6		5,3	4,3	
Tertiary Education	5,0	2,1	*	5,7	3,1	+	9,5	4,0	*	2,0	3,9		15,9	4,5	***	21,9	10,3	*	33,2	8,7	***	3,1	4,7	
Mother Low Sec. Educ.	1,1	1,8		3,6	2,8		-2,2	3,2		1,0	3,3		2,9	3,7		10,2	9,2		-5,6	6,9		2,1	3,7	
Mother High Sec. Educ.	4,7	2,0	*	6,1	3,0	*	2,6	3,6		5,0	3,9		7,7	4,2	+	15,6	10,1		-0,8	7,8		6,1	4,4	
Mother Tertiary Educ.	5,1	2,2	*	8,1	3,2	*	0,5	4,0		4,7	4,3		15,5	4,6	**	31,8	10,6	**	-0,9	8,8		5,0	5,0	
Father Full-Time	-17,9	2,7	***	-12,1	3,9	**	-14,6	5,3	**	-24,0	4,7	***	-40,2	5,5	***	-65,9	13,3	***	-30,6	11,8	*	-28,6	5,2	***
Father Overworks	-17,5	3,6	***	-14,4	5,2	**	-11,3	6,6	+	-22,9	7,3	**	-48,2	7,6	***	-74,1	17,5	***	-38,0	14,4	**	-31,0	8,4	***
Mother Short Part-Time	10,2	1,7	***	12,8	2,5	***	10,0	3,1	**	7,1	3,4	*	14,1	3,7	***	24,1	8,4	**	20,0	6,7	**	5,6	4,0	
Mother Long Part-Time	11,6	1,8	***	10,4	2,7	***	13,9	3,5	***	10,7	3,3	**	15,1	3,9	***	29,6	9,0	**	22,5	7,6	**	6,3	3,9	
Mother Works Full-Time	10,5	1,3	***	10,6	1,9	***	10,1	2,4	***	9,7	2,5	***	10,2	2,7	***	15,6	6,4	*	15,5	5,1	**	4,3	2,8	
Outside Household Help	1,5	1,2		1,4	1,7		1,4	2,1		3,9	2,7		3,3	2,6		-6,1	5,6		5,8	4,5		5,2	3,2	
Son in Household	1,6	1,1		1,1	1,6		4,0	2,2	+	0,6	2,2		3,9	2,4		3,6	5,4		12,4	4,7	**	-1,5	2,5	
Number of Children	-1,3	0,8		0,3	1,1		-5,2	1,5	**	-0,1	1,7		-0,1	1,8		6,7	3,8	+	-8,1	3,3	*	0,4	2,0	
Constant	27,4	3,7	***	16,8	5,5	**	33,7	6,9	***	31,8	6,6	***	37,6	7,6	***	70,7	18,3	***	62,2	15,2	***	38,5	7,4	***
Adj. R-Squared	0,12			0,16			0,14			0,09			0,15			0,11			0,13			0,04		
n.	2628			920			760			948			2941			942			792			1207		

Source: *2003 Spanish Time-Use Survey* (Spanish National Institute of Statistics) / Controls: "weekend day" and "child aged 0-4" for the child 0-11 sample.

+ p-value < 0,1 * p-value < 0,05 ** p-value < 0,01 *** p-value < 0,001.

Table 3. Multivariate Regressions. Fathers' Interactive Time and Teaching Child Care Activities by Children's Age

	All Interactive Child Care Time (OLS)												Only Teaching Child Care (Logistic Regressions) (*)									
	Child 0-11			Child 0-2			Child 3-5			Child 6-11			Child 0-11			Child 0-2			Child 3-5			Child 6-11		
Variables	*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Coeff*	*S.D.*		*Odds*	*S.D.*		*Odds*	*S.D.*		*Odds*	*S.D.*		*Odds*	*S.D.*	
Low Secondary Educ.	-0,2	2,4		-4,6	5,4		1,2	4,8		1,7	2,8		0,23	0,35		0,13	1,00		0,36	0,83		0,18	0,42	
High Secondary Educ.	3,8	2,7		-3,4	6,0		7,0	5,4		6,9	3,2	*	0,81	0,37	*	1,01	1,07		1,06	0,84		0,65	0,45	
Tertiary Education	5,2	3,0	+	1,1	6,4		12,3	6,1	*	3,7	3,5		1,13	0,38	**	1,16	1,05		2,41	0,86	**	0,58	0,47	
Mother Low Sec. Educ.	1,9	2,4		2,5	5,7		-2,4	4,9		3,1	2,8		-0,27	0,32		-0,48	0,85		-0,40	0,65		-0,01	0,42	
Mother High Sec. Educ.	2,7	2,8		-0,3	6,2		5,9	5,5		1,6	3,4		0,15	0,35		-1,81	1,11		0,12	0,67		0,56	0,46	
Mother Tertiary Educ.	5,7	3,1		9,4	6,5		-1,6	6,2		4,8	3,8		-0,08	0,37		-1,21	0,99		-0,94	0,76		0,63	0,49	
Father Full-Time	-20,2	3,6	***	-34,3	8,2	***	-22,4	8,3	**	-11,7	3,9	**	-0,61	0,32	+	0,00	1,21		0,34	1,08		-0,88	0,37	*
Father Overworks	-26,1	5,0	***	-41,4	10,8	***	-25,5	10,2	*	-16,5	6,3	*	-1,02	0,67		-13,98	11,12		0,01	1,48		-0,97	0,82	
Mother Short Part-Time	2,5	2,4		5,6	5,2		6,9	4,7		-2,0	3,0		0,41	0,27		1,23	0,81		0,61	0,52		0,11	0,37	
Mother Long Part-Time	-3,5	2,6		1,3	5,6		-9,8	5,4	+	-1,9	3,0		0,22	0,28		1,73	0,80	*	-0,52	0,71		0,00	0,35	
Mother Works Full-Time	0,2	1,8		1,8	4,0		0,7	3,6		-0,2	2,1		0,31	0,21		0,26	0,76		0,45	0,44		0,17	0,27	
Outside Household Help	2,4	1,7		1,2	3,5		5,8	3,2	+	0,2	2,4		-0,18	0,21		0,03	0,63		-0,13	0,38		-0,09	0,28	
Son in Household	4,7	1,6	**	5,4	3,4		4,6	3,3		3,3	1,9	+	0,18	0,19		0,64	0,79		-0,47	0,39		0,36	0,24	
Number of Children	-1,3	1,2		2,8	2,3		-4,1	2,4	+	-2,9	1,5	+	0,38	0,14	**	1,55	0,41	***	0,72	0,29	*	-0,03	0,18	
Constant	23,1	5,0	***	44,0	11,3	***	36,9	10,7	**	19,8	5,6	***												
Adj. R-Squared	0,06			0,05			0,05			0,01			0,08			0,19			0,11			0,05		
n.	2941			942			792			1207			2941			942			792			1207		

Source: *2003 Spanish Time-Use Survey* (Spanish National Institute of Statistics) / Controls: "weekend day" and "child aged 0-4" for the child 0-11 sample.

+ p-value < 0,1 * p-value < 0,05 ** p-value < 0,01 *** p-value < 0,001 / (*) The Pseudo R-Squared is included in the logistic models.

ANNEX

Table 1b. Definition of Dependent Variables

	Activities coded in the MTUS (a)	*Examples of activities*
Primary Child Care Time	380, 381, 382, 383, 384, 389	Playing with child, teaching, feeding, accompanying, travel escorting a child, bathe, and other primary child care
Physical Child Care Time	381, 384, 939	feeding, bathe the child, supervising, putting child in bed, accompanying child, and related routine/physical activities
Interactive Child Care Time	382, 383	playing, teaching, reading to the child, and other related interactive and developmental activities
Teaching Child Care Time	382, 382	teaching, homework with child
Father's share of Phyiscal Care time	381, 384, 939	feeding, bathe the child, supervising, putting child in bed, accompanying child, and related routine/physical activities

Source: "2003 Spanish Time-Use Survey" (INE; Spanish National Institute of Statistics)

(a) Multinational Time Use Study database (For information on the harmonization: http://www.timeuse.org)

Table 2b. SUR Estimation. Fathers' Daily Minutes in Specific Activities (a)

	Child Care (b)			Paid Work			Leisure		
	Coeff	*SD*		*Coeff*	*SD*		*Coeff*	*SD*	
Low Secondary Education	-2,8	7,1	*	-8,9	24,3		-11,8	9,5	
High Secondary Education	16,8	8,0	*	-32,9	27,3		1,3	10,6	
Tertiary Education	32,8	8,7	***	-30,9	29,6		-6,9	11,5	
Mother Low Secondary Education	4,3	7,4		25,1	25,3		-7,5	9,9	
Mother High Secondary Education	12,8	8,3		9,7	28,2		-8,4	11,0	
Mother Tertiary Education	25,7	8,9	**	-36,6	30,2		-2,3	11,8	
Mother Employed	23,5	4,4	***	-3,5	15,1		-7,3	5,9	
Son in Home	11,4	4,7	*	0,6	16,0		-8,7	6,2	
Number of Children	0,4	3,3		8,2	11,2		1,2	4,4	
Constant	34,4	10,2	*	371,2	34,7	***	141,9	13,6	***
R-Squared	0,09			0,01			0,01		
n.	1744			1744			1744		

Correlation Matrix of Residuals

	Child Care	Paid Work	Leisure (without child)
Child Care	1	n.a	n.a
Paid Work	-0,32	1	n.a
Leisure	-0,05	-0,37	1

(a) SUR (Seemingly Unrelated Regressions). Models for families with a child aged 0-4.

(b) "Child Care Time" includes the total primary child care time; "Leisure Time" excludes leisure with the child.

Source: "2003 Spanish Time-Use Survey" (INE, Spanish National Institute of Statistics).

* p-value < 0,05 ** p-value < 0,01 *** p-value < 0,001