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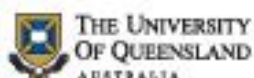
Fathers' Involvement in Childcare Before and During the Great Recession

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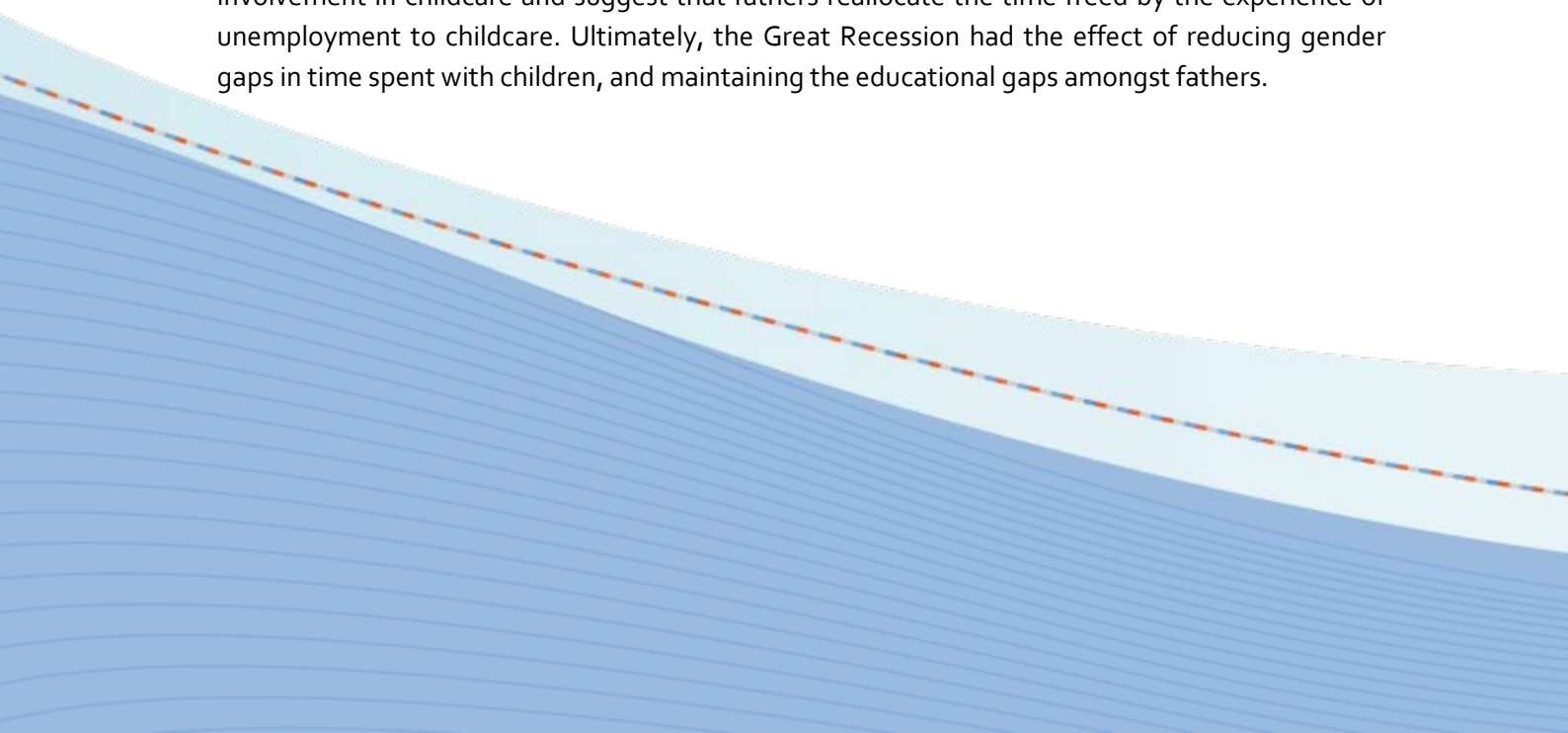
NON-TECHNICAL SUMMARY

Gender disparities in Western societies have decreased in recent decades, while social inequality has increased. These patterns have been accentuated since the late 2000s due to the Great Recession. However, most research has focused on tracking gender disparities in labor market outcomes. Little is known about disparities concerning a critical dimension of the intergenerational transmission of advantage: time with children. How have gender and education gaps in time with children evolved during the Great Recession? This study answers this question using rich Spanish time-use data from two different time points: one before the recession (2002-2003) and one during (2009-2010).

I contribute to the literature in three key ways. First, I extend previous US research on economic cycles and paternal childcare involvement to Europe. Spain is an excellent case study to examine the relationship between paternal childcare time and macroeconomic conditions. This is because the labour market in Spain is highly volatile, and more sensitive to business cycles than the labour markets of most OECD countries. Second, I add to the literature by considering changes in paternal involvement over time and across children's developmental stages. Third, while previous research has revealed a relationship between paternal educational level and time spent with one's children, this is the first study to evaluate how educational differences relate to macroeconomic conditions.

Findings indicate that the time expenditure gap between mothers and fathers has narrowed in those types of care that were the most gendered –including physically demanding tasks such as changing nappies or feeding children. This reduction is however moderate (50 minutes per week, on average), and was disproportionately driven by families with very young children (<2 years old). In these families, the gap was reduced by 3 hours per week, on average. During the recession, highly educated fathers spent significantly less time than lowly educated fathers in physical care. This suggests that poorly skilled fathers “undid gender” by constrain. There were however no changes over the recession period in differences by paternal education on time spent in developmental care (i.e. cognitively stimulating activities, such as reading or play).

These findings are in line with those from the literature on business cycles and fathers' involvement in childcare and suggest that fathers reallocate the time freed by the experience of unemployment to childcare. Ultimately, the Great Recession had the effect of reducing gender gaps in time spent with children, and maintaining the educational gaps amongst fathers.



ABOUT THE AUTHORS

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Abstract

In Western societies in recent decades gender disparities have decreased while social inequality has increased. These patterns have been accentuated since the late 2000s due to the Great Recession. However, little is known about how these trends in the labour market have been reflected in a critical site for the social reproduction of inequalities: time with children. This study aims to investigate the evolution of the gender and education gaps in physical and developmental time with children during the Great Recession, focusing on fathers. To do so I use two waves of the Spanish Time Use Survey carried out before (2002-2003) and during the economic recession (2009-2010) and a sample of 5,674 couples with children under 13 years old. Results show that during the recession fathers increased their participation in both physical and developmental childcare. The “classic” gender gap in physical childcare time has narrowed, especially among couples without university degrees and very young children, as an effect of the Great Recession mediated by increased paternal unemployment. Conversely, the developmental childcare gap between fathers with and without degrees has seen no change during the Great Recession.

Keywords: time use; fatherhood; social stratification; gender; child development

Introduction

We are living in an era of narrowing gender differences but widening socio-economic inequality. In the last decades, in Western societies, the gender wage gap has declined (Weichselbaumer and Winter-Ebmer, 2005) while income inequality between those with and those without university degrees has grown substantially (Piketty, 2014; Autor, 2014). The narrowing of gender differences and widening of socio-economic (SES) disparities in the labour market have accelerated during the late 2000s and early 2010s due to the Great Recession (Karamessi and Rubery, 2013; Meyer and Sullivan, 2013). However, very little is known about how these changes have affected a critical dimension of the social reproduction of inequality: time with children. Are there patterns in childcare time similar to those in the labour market? Have any such disparities in childcare time reduced, persisted or increased during the recession? This study aims to analyse whether these employment trends are matched by a similar pattern in childcare time during the Great Recession, focusing on fathers and using Spain as a case-study.

I contribute to the literature in three ways. First, I extend the previous research on economic cycles and paternal childcare involvement from the USA to Europe. Spain is an excellent case-study of the relationship between paternal childcare time and macroeconomic conditions because it has one of more volatile labour markets among Western economies. Spain is also more sensitive to business cycles than most OECD countries and its unemployment rates are extreme and fluctuate persistently (Bentolila et al., 2011). Such characteristics make it a particularly suitable case for this study. Second, I add to this literature consideration of changes in paternal involvement over time *and* across children's developmental stages. Third, as far as I know, this is the first study to evaluate how the paternal education gap in developmental childcare time is associated with macroeconomic conditions. Although previous research has established a gradient between educational level and time with children, scholars rarely consider whether and how this gradient varies as economic conditions change. Unlike previous research, I stress the relevance of macroeconomic cycles to variations in gender and education gaps in childcare time. By exploring the correlation between the economic recession and

changes in disparities in paternal childcare time, I offer new empirical evidence on how gender *and* education gaps change over time.

Paternal childcare time is central to both gender equality and children's skills development. In terms of gender equality, an involved father allows greater time for the mother to learn, work or relax. Indeed, the amount of time fathers spend with their children has increased over the last decades, reflecting the emergence of the "new father" (Craig et al., 2014). Nevertheless, childcare responsibilities still fall more on mothers than fathers, particularly when the child is very young and requires more physical care (i.e. that part of childcare that encompasses time-inflexible, intensive and physically demanding activities such as changing nappies, feeding and bathing) (Bittman et al., 2004). Previous research suggests that parental involvement in the labour market is a key element in explaining the narrowing gender gap in childcare time, especially in physical care (Raley et al., 2012). As men became less involved in paid work and women more, men spend more time with children. However, studies are actually inconclusive on this issue. While some find a positive relationship between maternal employment and paternal childcare time (Raley et al., 2012), other studies found no such association (Pleck, 1985; Sandberg and Hofferth, 2001). This study aims to contribute to answering this open question by investigating the impact of an external macroeconomic shock that forced men to exit and women to enter the labour market. I evaluate how these changes in employment patterns are linked with the gender gap in childcare involvement across developmental stages *and* over time. The study adopts an original empirical approach to better understand not only how the distribution of childcare is changing but also how paternal involvement specifically changes with economic cycles.

With regard to children's skills development, the role of the father is crucial for the formation of cognitive and socio-emotional skills (Lamb, 2010). The *new* father-child relationship is marked by horizontal communication, closeness, expressiveness and emotional support (Barbeta and Cano, 2017). Indeed, the increase of paternal involvement has been most noticeable in developmental childcare time (e.g. reading or playing). However, while there is less gender inequality in this type of time, social inequality is greater (Craig and Mullan, 2011).

Research has documented a persistent education gap in developmental time (Guryan et al., 2008; Putnam, 2015; Gracia, 2014 for Spain), with more educated parents spending more developmental time with their children than less educated parents. Importantly, an emerging body of literature shows that this type of time is the most productive input for children outcomes (Fiorini and Keane, 2014), which in turn links the role of developmental childcare time to the intergenerational transmission of advantage. To explain the formation and reproduction of this education gap, the influential study of Lareau (2011) argued that social class shapes parenting styles: more educated parents prioritise a structured use of time focusing on stimulating cognitive activities while less educated parents give children more freedom and less cognitive stimulation. Although recent work looks at the evolution of this gap in developmental childcare time (Altintas, 2016), this literature has focused either on the evolution of the “parenting gap” over time or on gender inequality. No study has looked specifically at how the parenting gap between high and low educated fathers has evolved during the Great Recession. This study aims to fill this gap.

To do so, I use data from two Spanish Time Use Surveys, one conducted before the recession (2002-2003) and the other during the recession (2009-2010). I use a sample of 5,674 married or cohabiting couples with at least one child under 13 at home.

Theoretical framework

Physical and developmental care are qualitatively different. Physical care was conceptualised by Bittman et al. (2004: 142) as “High contact childcare: Face-to-face parent–child interaction that revolves around physical care of children” (e. g. feeding, bathing or dressing). This type of care tends to a child’s basic needs as well as its security and well-being. It is time-inflexible, physically demanding and concentrated in early infancy. These characteristics make physical care key to explaining gender inequality in unpaid work within couples. For example, Craig (2006) found that mothers spend triple the amount of time performing this type of care than fathers.

Developmental care was defined by Bittman et al. (2004: 142) as “face-to-face

parent–child interaction that involves activities believed to be critical for the development of children’s linguistic, cognitive, and social capacities” (e. g. reading, play). This type of care tends to the intellectual needs of the children, is time-flexible and not very physically demanding. These characteristics help explain why the gender gap in developmental childcare time is lower than for physical care (Craig, 2006) but the education gap is larger (Altintas, 2016).

Theories and previous studies from sociology and economics offer competing hypotheses to explain variations in paternal contributions to physical and developmental care across families and over time. I shall now elucidate these hypotheses, first for physical and then for developmental time.

Physical care

The first theoretical perspective on gender inequality in physical care appeals to time availability at macro and micro levels. At the macro level, the *theory of the allocation of time* (Becker, 1965) claims that unpaid domestic labour is linked to macroeconomic conditions, suggesting that it increases during recessionary periods because unpaid domestic labour replaces goods and services previously acquired in the market (Greenwood and Hercowitz, 1991). During recessions, wages decline while unemployment increases. In line with this, perceived or real changes in a family’s economic stability would induce parents to reduce their expenditure on childcare by doing it themselves instead of paying someone else. At the micro level, the *time availability* hypothesis contends that gender variations in physical childcare time are explained by parents’ employment statuses. The more time the mother spends in the labour market, the more time the father will spend on physical care and the more time the father spends in paid work, the less physical care he will be able to provide. Both perspectives lead to similar predictions. First, the higher the unemployment rate, the more time fathers will spend on physical childcare. Second, unemployed fathers will be the most involved*.

* Traditionally, the relative resources hypothesis, originally rooted in both theories of power and neoclassical economics, has been used to explain intra-couple dynamics and the specialization of men in paid work and women in unpaid work. This theory suggests that the partner who has more resources in the couple (usually the male partner) will impose their decisions on the other person. However, recent literature (see Sullivan, 2011 for a review), argues that while this theoretical tradition was useful for explaining the distribution of housework, it does not extend to childcare, because childcare, unlike housework, is

The time-allocation account is challenged by the *gender deviance neutralisation* and *unemployed deterioration* hypotheses. The gender deviance neutralisation hypothesis (Greenstein, 2000; Schneider, 2012) claims that unemployed fathers would not increase their time in physical care compared to those that are employed. The idea is that unemployed men face social stigma for deviating from the norm of being breadwinners and therefore aim to protect their masculinity by not getting involved in what are considered the feminine tasks of physical childcare (Brines, 1994). The unemployed deterioration hypothesis appeals to the well-established fact that unemployment impairs wellbeing (Paul and Moser, 2009) and claims that this, in turn, might reduce childcare involvement due to feelings of failure and of being an inadequate role model. However, two mechanisms blunt the gender deviance neutralisation and unemployed deterioration hypotheses. Firstly, the *attenuation effect* (Oesch and Lipps, 2013) suggests that when more men are unemployed, unemployment is seen as less of a deviation from the norm and is therefore less detrimental to wellbeing. Secondly, the *compensatory fatherhood effect* (Barbeta and Cano, 2017: 21) suggests that “fathers re-signify their problematic situation (unemployment) in terms of an opportunity to be with their children and take care of them”, thereby ameliorating the feeling of ineffectiveness caused by unemployment.

Investigations of the time-allocation hypothesis have so far yielded mixed results. At the micro level, while some studies find a correlation between parental employment status and childcare involvement (Sayer et al., 2004; Gutierrez-Domenech, 2010), others do not (Craig and Mullan, 2009; Hook and Wolfe, 2013). In recent years, scholars have suggested that physical care should be analysed separately from other types of care in light of its distinctive characteristics, such as being time-inflexible. By focusing on physical care, studies find stronger correlations between employment status and paternal involvement (Raley et al., 2012; Gracia, 2014). At the macro level, a growing body of literature has emerged

pleasurable and thus desirable. Couples therefore do not bargain to avoid childcare. Ultimately, parents with more individual resources may use them to bargain into, rather than out of, childcare. For this reason, I have not used the relative resources theory in this study.

since the beginning of the Great Recession, suggesting a trend towards gender equality in both paid and unpaid work (Berik and Kongar, 2013). Notably, Aguiar et al. (2014) found a significant increase in time spent on childcare, estimating that roughly 5 percent of foregone hours of paid work are allocated to increased childcare work.

Four studies (Gorsuch, 2016; Knop and Brewster, 2015; Hofferth and Lee, 2015; Bauer and Sonchak, 2017) have looked at paternal involvement in physical childcare during the Great Recession, all using the American Time Use Survey (ATUS), except Knop and Brewster (2015), who used a sample of partnered fathers with children from the National Survey of Family Growth (NSFG). Knop and Brewster found an increase in all physical care related activities but not in developmental ones (e. g. reading). Hofferth and Lee (2015) conducted a similar study and generated the same results. Focusing on differences in family structure, they found that the most involved fathers were those in female breadwinner couples or in couples where both partners are unemployed. This was also the conclusion reached by Gorsuch (2016) and Bauer and Sonchak (2017). Interestingly, the study by Gorsuch (2016) showed that both unemployed and employed fathers increased their physical childcare time during the recession.

Developmental care

Developmental time with children is regarded by parents as more enjoyable than physical care. But, also, as an investment strategy. Parents spend developmental time with their children in the hope that this will promote the development of skills and lead to success in education and the labour market (Putnam, 2015). Ultimately, the more developmental time parents invest, the more likely it is that their children will reproduce the parents' social status. The sense in which parents may see developmental care as an investment is also rooted in the narrative of intensive parenthood, a discourse that emphasises parental responsibility and control. This cultural narrative suggests that "high-quality time" maximises a child's brain development through ample and appropriate stimulation in their early years (Wall, 2010). However, the extent to which parents adhere to the narrative of intensive parenting and "quality time" might differ according to their socioeconomic status.

Lareau's ethnography (2011) suggests that middle and upper class parents adhere more to the ideal of intensive parenting, which she calls the "concerted cultivation" style of parenting. Parents who develop a concerted cultivation strategy focus on stimulating cognitive activities that lead to better child development. On the contrary, less educated parents tend to develop a "natural growth" style of parenting. Natural growth parenting does not involve a constant focus on educational activities (i. e. developmental care) or close monitoring of children's school performance. It gives children more autonomy, liberating them from the constant parental scrutiny of "intensive parenthood".

Quantitative research on this hypothesis has found mixed results. A number of studies (e. g. Guryan et al., 2008; for the Spanish case see Gracia, 2014) have found a linear relationship between educational level and both quantity and "quality" of parenting for both fathers and mothers. However, this positive relationship may not be universal and may change over time. Berghammer (2012) found that the relationship between education and time with children did not obtain in Germany or Austria. And scholars rarely consider how the education gap in developmental childcare changes over time. Two exceptions are the studies of Craig et al. (2014) and Altintas (2016), which also yielded mixed results. Craig et al. (2014), using Australian Time Use data, found that the effect of education on parent-child time has diminished in recent decades and that the linear association between education and time with children reversed in 2006. On the other hand, Altintas (2016), using American Time Use data, concluded that the education gap in developmental care had widened in the last forty years.

These mixed results shed doubts on the family polarisation (Esping-Andersen, 2009), unequal childhoods (Lareau, 2011; Putnam, 2015) and diverging destinies (McLanahan, 2004) theses. In addition, these results suggest that increasing income inequality in the labour market (Piketty, 2014) and the widening gap in parental spending on children (Kornrich and Furstenberg, 2013) may not be translated into diverging paternal time investments and, if they are, not to the same extent. We can shed light on this unresolved issue by examining how the education gap in developmental time changes in recessionary periods. However, to my knowledge,

no previous research has addressed how the education gap in *paternal* behaviour varies with macroeconomic fluctuations.

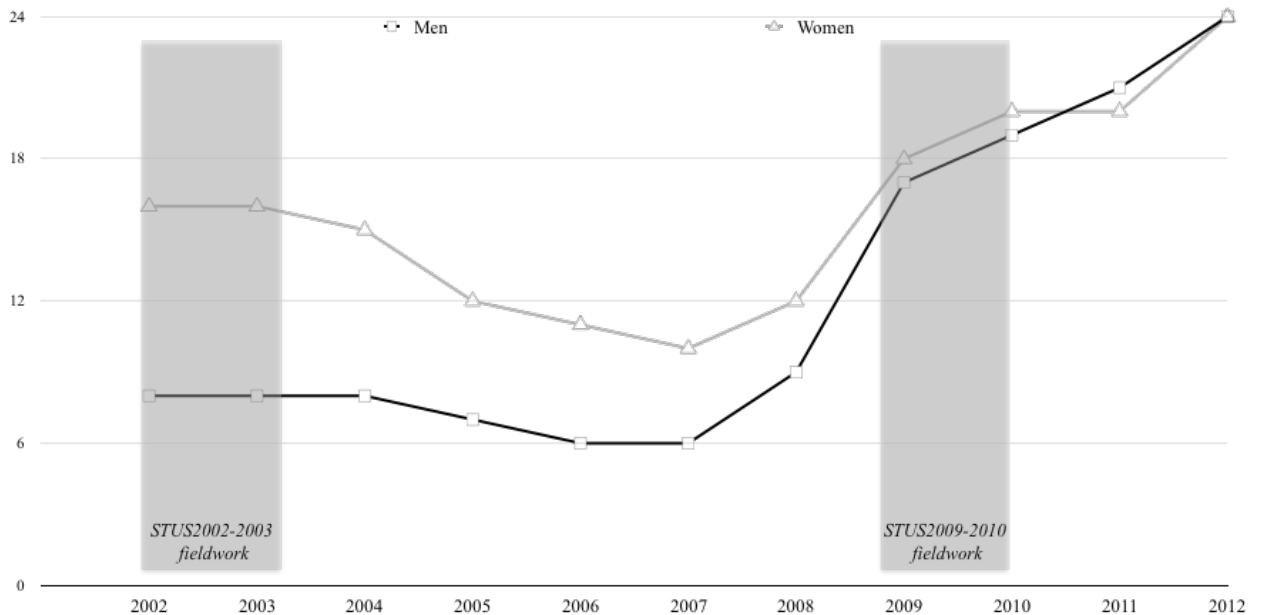
The Spanish case

Spain is probably the best case available to study how the Great Recession and the business cycle more generally are associated with variations in childcare time. This is so because parental childcare investments are endogenous to parental labour market involvement through a *bidirectional relation between paid work and family time* (Hook, 2012) and Spain experienced an especially severe economic recession. The construction sector collapsed and dragged down the economy as a whole. There was a significant increase in unemployment: the male unemployment rate rose from 8.1% in 2002 to 19.2% in 2010. For fathers between 25 and 55 years old with at least one child at home, the unemployment rate almost trebled, passing from 5% in 2002 to 14% in 2010 (INE, 2012). At the same time, research has documented (Anghel et al., 2014) that employment polarisation was already increasing before the recession and was accelerated after 2007. This research also found that this polarisation was accelerated for men but not for women. As a consequence of the massive increase in male unemployment, many women entered the workforce such that, for the first time in the history of the country, male and female unemployment achieved similar rates (see Figure 1). This generated new configurations of available time for fathers and mothers. Austerity measures adopted by the Spanish Government included significant cuts to basic family welfare policies. For instance, in family/children policies, the yearly variation percentage for the 2000-2006 period was +7.6. This figure changed abruptly to -0.3 for the period 2007-2011 (Leon and Pavolini, 2014: 364), in what these authors called “the end of the illusion”.

The abrupt shock created by the financial crisis in the labour market very likely increased economic worries and uncertainty in many households, motivating the adoption of new decision making processes about the organisation of childcare responsibilities. Moreover, childcare investment decisions are not only sensitive to household employment situations but also to the aggregate labour market and social policy conditions. This suggests that the Spanish economic downturn may

play a role in the previously identified gender and education gaps in childcare time (Craig and Mullan, 2011; for the Spanish case see Baizán et al., 2013).

Figure 1: Unemployment rates by gender (Spain, 2002-2010)



Source: Encuesta de Población Activa (Spanish Institute of Statistics, 2017 [for details, see www.ine.es]). *Note:* All active individuals from 16 years old and older are included.

Hypotheses

My first hypothesis refers to the variation in the gap between fathers and mothers in time devoted to physical childcare from 2002-2010. Drawing on previous literature, I propose that aggregate labour market conditions acted as an *attenuation effect* on *compensatory fatherhood* in the interaction of macro and micro levels. Very high rates of male unemployment alleviated possible threats to masculinity at the same time as fathers' additional free time allowed them to spend more time with their children. Importantly, paternal involvement is a key component of what it means to be a "*good father*" according to the new discourse of intensive parenting that has spread in recent decades.

Hypothesis 1a.— *I predict that, during the recession, there will be a more significant increase in physical childcare time for fathers than for mothers. Therefore, the gender gap will be narrowed.*

In addition, previous research has found that highly educated parents are comparatively better in tailoring shared activities to their children's age and developmental stage (Kalil, Ryan and Corey, 2012; Gracia, 2014 for Spain). However, three important points should be taken into account here. First, physical care is disproportionately time consuming during the first years of the child's life and gender inequality is higher in this period. Second, the economic crisis has accelerated the increase in dual-earner and female-breadwinner couples in Southern European countries and so may have also accelerated the diffusion of gender-egalitarian attitudes (Vitali, 2017). Third, recent multi-method research (Gerstel and Clawson, 2014) found that those in disadvantaged positions are "undoing gender", while those in advantaged positions "do gender" in traditional ways.

Hypothesis 1b.— *The reduction of the gender gap in physical care during the economic recession will be driven by less educated fathers during the first stages of the child's life.*

The second hypothesis concerns the variation in the education gap between higher and lower educated fathers in developmental care during the recession. For the case of Spain, the education gap in developmental care has already been noted (Gracia, 2014). I suggest that during the recession, parents decide to increase their developmental time investments in children due to concerns about boosting their children's chances in a more demanding future labour market. However, two other changes may also have happened during the recession. First, both types of fathers (higher and lower educated) are increasingly exposed both to intensive parenting ideology and to an increasing concern about a more challenging labour market for their children (Barbeta and Cano, 2017). Second, lower educated fathers experienced higher rates of unemployment and therefore had more time available, while more educated fathers faced lower rates of unemployment but increasing uncertainty and workloads. Therefore, I argue that during the recession, the willingness among higher educated fathers to adopt intensive parenting practices was somewhat constrained. At the same time, lower educated fathers had more time available to adopt this intensive approach.

Hypothesis 2.— *I predict a similarly significant increase in paternal developmental childcare time for both lower and higher educated fathers. Therefore, the education gap in developmental time will remain the same.*

Data and methods

Data were drawn from the two Spanish Time Use Surveys (STUS) conducted to date, one carried out before (2002-2003) and the other during the recession (2009-2010). STUS are a national representative survey of the time use of Spaniards aged 10 and over (National Institute of Statistics [INE], 2011). Time use surveys represent the best available data for analysing individuals' behaviour (Robinson, 1985). Using a time diary, individuals record details of most activities they perform over two 24-hours periods: a specified weekday and a specified weekend day. The diary divides a day into 144 10-minutes intervals. These surveys have a long tradition in sociological research and allow researchers to combine data from both members of a couple. Although they are not completely free of social desirability bias, better measurements are collected using such surveys than with the alternative, stylised time use questionnaires (Yee-Kan, 2008).

The sample consists of married or cohabiting couples with at least one child under 13 living at home. Therefore, the unit of analysis is couples who both filled out the time diary. I focus on children under 13 because after this the type of childcare changes significantly and features less intense paternal interactions. I am interested specifically in high intensity paternal childcare, both physical and developmental. During the early stages of a child's life, parental developmental time inputs have an especially significant impact on skills formation (Heckman, 2006). Significantly, the gender imbalance in physical childcare time is greater during the first years of a child's life (Craig and Mullan, 2011). 1,053 fathers were dropped from the sample because of missing information on their (719) or their partner's (334) educational attainment. Another 6 cases were removed due to lacking information about their use of domestic help. The final sample includes 3,876 couples in 2002 and 1,799 couples in 2010. Table 1 shows the descriptive statistics of the sample.

Table 1: Descriptive statistics.

| | 2002-2003 | | | | 2009-2010 | | | |
|-----------------------------|-----------|--------|---------|------|-----------|--------|---------|------|
| | Fathers | | Mothers | | Fathers | | Mothers | |
| | Mean/% | SD | Mean/% | SD | Mean/% | SD | Mean/% | SD |
| <i>Employment status</i> | | | | | | | | |
| Full time | 0.88 | 0.33 | 0.40 | 0.49 | 0.79 | 0.41 | 0.41 | 0.49 |
| Part time | 0.01 | 0.07 | 0.06 | 0.23 | 0.02 | 0.15 | 0.18 | 0.39 |
| Unemployed | 0.04 | 0.21 | 0.08 | 0.27 | 0.13 | 0.34 | 0.15 | 0.35 |
| Inactive | 0.06 | 0.23 | 0.42 | 0.49 | 0.05 | 0.23 | 0.26 | 0.44 |
| <i>Individual controls</i> | | | | | | | | |
| Age | 40.50 | 8.56 | 37.84 | 7.96 | 41.39 | 8.48 | 38.84 | 7.78 |
| University degree | 0.26 | 0.44 | 0.26 | 0.44 | 0.33 | 0.47 | 0.38 | 0.49 |
| <i>Household controls</i> | | | | | | | | |
| Age youngest child | | Mean/% | | SD | | Mean/% | | SD |
| Two children | | 5.32 | | 3.78 | | 5.00 | | 3.77 |
| Three or more children | | 0.51 | | 0.50 | | 0.48 | | 0.50 |
| Other adults living at home | | 0.11 | | 0.31 | | 0.10 | | 0.30 |
| Domestic help | | 0.22 | | 0.41 | | 0.19 | | 0.39 |
| Weekday diary | | 0.26 | | 0.44 | | 0.11 | | 0.32 |
| | | 0.66 | | 0.48 | | 0.61 | | 0.49 |

Source: Spanish Time Use Surveys (2002-2003 and 2009-2010), Spanish Institute of Statistics (INE).

Note: N=3,822 couples in 2002-2003 and 1,852 couples in 2009-2010.

Table 1 illustrates remarkable changes across the two survey waves. The differences reflect both the economic recession and demographic changes. Regarding the recession, in 2009-2010 paternal employment statuses vary dramatically. Fathers in full-time employment drop from 88% in 2002 to 79% in 2010 and the rate of unemployed fathers increases from 4% in 2002 to 13% in 2010. Another recession-related change is the decrease in households using domestic help from 26% in 2002 to only 11% in 2010. It is reasonable to assume that, as economic theory suggests (Greenwood and Hercowitz, 1991), during recessionary periods households use their own labour to produce goods previously acquired in the market, such as domestic work. The recession's impact can even be observed in the sample sizes themselves, with the sample reduced by more than half during the 2009-2010 STUS due to governmental austerity measures. Regarding demographic changes, the sample reflects the major demographic changes taking place in the Spanish society: higher rates of mothers holding a university degree and both a decline in and postponement of child-bearing (Esping-Andersen et al., 2013).

Measures

There are two *dependent variables*. First, *physical childcare*. Physical care is a continuous variable that sums up the total amount of time a parent spends on activities related to the physical development of the child (e. g. bathing, feeding, changing nappies). Second, *developmental childcare*. This continuous variable sums up the total amount of time a parent spends on stimulating cognitive activities (e. g. reading, educational play). These two variables represent direct parent-child interactions and their survey codes are defined thus (see Table 2). For the two measures of care I convert them into temporal quantities by multiplying the number of the 144 segments marked with any of the Table 2 survey codes by 10. Thus, the metric of the two dependent variables is minutes per day.

Table 2: Specification of father-child activities do together and its survey codes included in the dependent variables

| <i>Variable</i> | <i>Codes in STUS* & MTUS†</i> | <i>Examples of activities</i> |
|-------------------------|-----------------------------------|--|
| Physical childcare | 381 | Feed, bath, putting child to bed, taking care when the child is ill. |
| Developmental childcare | 382 and 383 | Read, play, talk, do homework together |

Source: Spanish Time Use Surveys (Spanish Institute of Statistics).

Notes: *Both STUS use same codes for similar activities.

†For information on the harmonization procedure, see: <http://www.timeuse.org>

The main *independent variable* of interest here is the *year of the survey*. I am interested in the effect of the recessionary period on the gender and education gaps in physical and developmental childcare. Hence, I merged the two survey waves and created a dummy variable identifying the wave conducted during the recession (0=2002-2003; 1=2009-2010). Then, because I hypothesise that the main impact of the recession on physical childcare time was due to changes in the labour market, the employment statuses of both fathers and mothers are the main variables of interest. I created four dummy variables for fathers (full time, part time, unemployed and inactive) and similar variables for mothers. Finally, as the second main aim of this study is to evaluate variations in the education gap in developmental care time, I use the educational attainment of fathers and their partners as dummy variables (1=University degree).

The *control variables* are those regarded in the literature as the most important factors impacting paternal involvement in childcare. At the individual level, the controls are (i) fathers' age and age squared (continuous) and (ii) day of the week (dummy [1=weekday]), because in Spain, as a result of the long working day, paternal childcare is concentrated during weekends. At the household level, I control for (i) the age of children (categorical [1=youngest child 0-4; 2=youngest child 5-12]), because childcare needs vary depending on the age of the child (Kalil et al., 2012); (ii) number of children at home (two dummy variables: [1=two children] and [1=three or more children]), since the number of children is related to a greater amount of time spent in childcare and the total load of care work required; (iii) adults at home other than parents (dummy), given that when there are other relatives at home they usually contribute to childcare, thereby reducing paternal involvement (Meil and Rogero-García, 2015). This variable captures (a) grandparents living at home, (b) other relatives, (c) older (adult) siblings. The final control variable is (iv) domestic help (dummy), because when families outsource domestic labour they usually do so for housework in order to have greater time available for childcare (Bianchi, 2011).

Analytical strategy

I use a nested model strategy in which I separately estimate paternal and maternal physical and developmental childcare time using as predictors (i) the year of the survey, (ii) parental employment status and education, and (iii) the interaction between (i) and (ii). The models control for a set of basic socio-demographic traits, allowing me to evaluate whether during the recession there has been a significant increase in time spent by fathers (and mothers) on each type of care. I create a model that includes paternal employment status and education as well as their partner's characteristics. The reference category is a partnered parent who works full time and did not hold a University degree in 2002. To test hypothesis 1b, I derive five different subsamples depending on the age of the child (less than one year old, one year old, two years old, three, four and five or more years old). Finally, I predict both types of care in separate models for fathers and mothers since the control variables do not have the same effects on each gender. In addition to descriptive means of

paternal time spent on both types of childcare, the technique used to model the data is ordinary least squares (OLS) linear regressions for the two types of care.

Results

The descriptive results suggest that during the recession both fathers and mothers increased their time spent on both physical and developmental childcare. Table 3 shows the descriptive means of paternal and maternal time spent on physical childcare by employment status before and during the recession. Looking at this table, all fathers, regardless of their employment status, increased their time spent on physical childcare. It is possible that this reflects a heightened awareness of gender egalitarianism and intensive parenting by fathers in 2010. The biggest increase was among unemployed fathers, giving support to the hypothesis that the gender gap in childcare has decreased, primarily as an indirect effect of the Great Recession, by way of an increase in fathers' available time. Nonetheless, fathers in full-time employment also spent significantly more time on physical childcare during the recession. It is possible, as previous research argues, that "it may not require a job loss to change; change in hours or job insecurity may also lead to changes in the division of labor at home" (Hofferth and Lee, 2015: 320). Nevertheless, it is remarkable that the gap in time spent in physical care between fully employed and unemployed fathers more than doubled during the recession, going from 10 minutes in 2002 to 24 in 2010.

Table 3: Fathers' and Mothers' time in physical childcare by employment status (*minutes per day*)

| | Fathers | | | | | Mothers | | | | |
|--------------------------|---------------|-------|-----------|-------|------------|---------------|--------|-----------|--------|------------|
| | Pre-recession | | Recession | | Difference | Pre-recession | | Recession | | Difference |
| | Mean | SD | Mean | SD | | Mean | SD | Mean | SD | |
| <i>Employment status</i> | | | | | | | | | | |
| Full Time | 24.14 | 48.36 | 34.52 | 58.21 | 10.38*** | 60.05 | 75.38 | 70.82 | 96.89 | 10.77*** |
| Part time | 35.00 | 63.45 | 34.19 | 50.86 | 0.81 | 69.45 | 66.76 | 80.23 | 82.65 | 10.78* |
| Unemployed | 34.14 | 65.96 | 58.52 | 93.49 | 24.37** | 101.61 | 101.69 | 112.74 | 109.00 | 11.13† |
| Inactive | 16.86 | 53.54 | 22.65 | 50.38 | 5.79 | 88.67 | 100.14 | 94.50 | 100.22 | 5.83 |
| <i>N</i> | 1,911 | | 926 | | | 1,911 | | 926 | | |

Source: Spanish Time Use Surveys

Notes: T-tests are used to identify significant variation across time.

Significance levels: † < 0.1, *p < 0.05, ** p < 0.01, *** p < 0.001.

Table 4 shows the descriptive means of paternal time in developmental childcare by fathers' level of education. This table also shows that both more and less educated fathers have increased the time they spend on developmental childcare. During the recession, less educated fathers spend 5.5 minutes more per day, while more educated fathers spend 7.6 minutes more. The descriptive means suggest that the gap between low and high educated fathers remains and increased slightly during the recession. However, these are simple means. To test for the variation in childcare time during the recession I need to control for other factors that may also have changed between 2002 and 2010.

Table 4: Fathers' time in developmental childcare by fathers' level of education

| | Pre-recession | | Recession | | Difference |
|---------------------------|---------------|-----------|-------------|-----------|------------|
| | <i>Mean</i> | <i>SD</i> | <i>Mean</i> | <i>SD</i> | |
| <i>Level of education</i> | | | | | |
| University degree | 22.50 | 42.84 | 30.11 | 43.65 | 7.60** |
| Secondary or lower | 15.67 | 35.66 | 21.22 | 53.59 | 5.55*** |
| <i>N</i> | 1,911 | | 926 | | |

Source: Spanish Time Use Surveys

Notes: T-tests are used to identify significant variation across time.

Significance levels: † < 0.1, *p < 0.05, ** p < 0.01, *** p < 0.001.

Now I turn to the multivariate analysis in which I test my two working hypotheses. Table 5, in which I test hypothesis 1a, shows the OLS results for physical care for fathers and mothers separately. Table 6 shows similar regressions but for a set of analytical subsamples that take into consideration the age of the child. In these models, I test hypothesis 1b. Finally, Table 7 shows the models for developmental childcare for fathers and tests hypothesis 2.

Physical care

Table 5 controls for a set of socio-demographic and employment characteristics of both partners and shows that both fathers and mothers increased their participation in physical care during the economic recession. The overall increase for fathers was greater than that for mothers (17.5 and 10.4 respectively; $p < 0.001$

and $p < 0.001$ respectively), and therefore reducing the gender gap in physical care during the recessionary period, as predicted in hypothesis 1a. The effect of unemployment for fathers' time in physical care is negative and is not significant. However, the interaction between unemployment and year of the survey shows that, during the recession, unemployed fathers spent significantly more time in physical care (10.4 daily minutes; $p < 0.01$) than fathers working full time before the recession. Interestingly, the effect of education on fathers' time in physical care is positive and significant. However, during the recession, the effect of education on fathers' time was reversed.

Table 5: OLS regressions – Fathers' and mothers' time in physical care.

| | Fathers' time | | Mothers' time | |
|---------------------------------------|---------------|------|---------------|-------|
| | β | SE | β | SE |
| Recession | 17.46*** | 2.16 | 10.41*** | 3.78 |
| <i>Employment status</i> | | | | |
| Part time | 3.09 | 3.59 | -11.38† | 6.27 |
| Unemployed | -1.85 | 2.61 | 15.66*** | 4.56 |
| Inactive | -3.22* | 1.63 | 20.86*** | 2.85 |
| <i>Interaction terms</i> | | | | |
| Recession * Part time | 1.48 | 4.71 | 0.43 | 8.23 |
| Recession * Unemployed | 10.43** | 3.76 | -16.13* | 6.57 |
| Recession * Inactive | 0.91 | 3.03 | -2.38 | 5.30 |
| <i>Education</i> | | | | |
| University degree | 9.48*** | 1.58 | 1.69 | 2.75 |
| Recession * University degree | -4.01† | 2.43 | 3.33 | 4.25 |
| <i>Partner information</i> | | | | |
| Partner works part time | 3.92† | 2.36 | -8.40* | 4.12 |
| Partner unemployed | 3.23† | 1.92 | 8.62* | 3.35 |
| Partner inactive | -2.7 | 1.45 | 22.86*** | 2.53 |
| Partner holds University degree | 7.93*** | 1.31 | 4.90* | 2.28 |
| <i>Control variables</i> | | | | |
| Age | -1.00** | 0.36 | -2.46*** | 0.63 |
| Age squared | 0.01** | 0.00 | 0.02** | 0.01 |
| Two children at home | 4.05*** | 1.12 | 8.11*** | 1.96 |
| Three or more children at home | -0.59 | 1.81 | 9.27** | 3.15 |
| Youngest child 5-12 years | -29.57*** | 1.36 | -98.93*** | 2.37 |
| Recession * Youngest child 5-12 years | -15.52*** | 2.23 | 5.46 | 3.90 |
| Other adults living at home | -5.68*** | 1.44 | -3.35 | 2.52 |
| Weekday | -6.95*** | 1.07 | 14.19*** | 1.87 |
| Domestic help | 5.96*** | 1.39 | -4.08† | 2.43 |
| Constant | 64.73*** | 8.02 | 186.07*** | 14.01 |
| Adjusted R ² | 0.14 | | 0.23 | |
| N | 5,674 | | 5,674 | |

Source: Spanish Time Use Surveys.

Note: Significance levels: † < 0.1, * $p < 0.05$, ** $p < 0.01$, *** $p < 0.001$.

Table 6: OLS regressions – Fathers’ and mothers’ time in physical care in couples with children of different ages.

| | Child < 1 years old | | | | Child 1 - 2 years old | | | | Child 2 - 3 years old | | | | Child 3 - 4 years old | | | | Child 5 + years old | | | |
|-------------------------|---------------------|-------|---------|------|-----------------------|-------|----------|------|-----------------------|-------|---------|-------|-----------------------|-------|---------|-------|---------------------|------|----------|------|
| | Father | | Mother | | Father | | Mother | | Father | | Mother | | Father | | Mother | | Father | | Mother | |
| | β | SE | β | SE | β | SE | β | SE | β | SE | β | SE | β | SE | β | SE | β | SE | β | SE |
| | | | | 14.4 | | | | 10.3 | | | | | | | | | | | | |
| Recession | 26.23** | 8.08 | 0.79 | 6 | 26.59*** | 7.12 | -3.39 | 6 | 0.94 | 5.96 | 22.71* | 9.26 | 8.54 | 5.85 | 4.31 | 8.63 | 3.28* | 1.57 | 20.63*** | 2.94 |
| Recession * | | | - | 27.5 | | | | 20.7 | | | | | | | | | | | | |
| Unemployed | 10.54 | 15.39 | 14.30 | 6 | 23.90† | 14.24 | -55.36** | 1 | 35.84** | 11.65 | -2.11 | 18.09 | 34.51** | 12.33 | -17.01 | 18.19 | -0.87 | 3.73 | -10.68 | 7.00 |
| Recession * | | | | 18.2 | | | | 13.5 | | | | | | | | | | | | |
| University degree | -3.69 | 10.17 | 42.82* | 2 | -15.27† | 9.33 | 40.74** | 7 | -15.91* | 7.54 | -26.01* | 11.70 | 0.16 | 8.10 | -16.15 | 11.95 | 1.16 | 2.33 | -6.75 | 4.37 |
| Adjusted R ² | 0.10 | | 0.06 | | 0.10 | | 0.07 | | 0.09 | | 0.08 | | 0.04 | | 0.05 | | 0.02 | | 0.03 | |
| N couples | 694 | | | | 720 | | | | 698 | | | | 732 | | | | 2,830 | | | |

Source: Spanish Time Use Surveys.

Notes: The models are based on the age of the youngest child at home and they are ran separately for fathers’ time and for mothers’ time. Models control for a set of individual and household characteristics, including similar controls than in Table 5. Full set of estimates available from the author upon request. Significance levels: † < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Table 6 shows the results of ten OLS models regressing physical care time for fathers and mothers disaggregating by children's ages. Looking at this table we observe that the largest significant increase in paternal involvement in physical childcare during the recessionary period was in households with children under two years old (26 daily minutes increase), while the maternal increase was larger for older children (5+ years). The increase of paternal time in physical care during the Great Recession decreases in families with older children: the older the child, the less increase. The opposite is found for the case of the interaction between education and year of the survey: fathers holding a University degree in 2010 spent less time in physical care than those without degree in 2002, especially in families with younger children (although not quite to a statistically significant degree). Finally, the effect of the interaction between unemployment and recessionary period is especially strong in families with children aged two and four years old.

Developmental care

Table 7 shows a regression analysis of paternal time spent on developmental childcare. Controlling for a set of demographic and socio-economic variables, the table shows that fathers also increased their participation in developmental childcare during the recession by nearly 4 daily minutes ($p < 0.01$). In addition, these results show that fathers holding a University degree are significantly more likely to spend time on developmental childcare than those without. On average, fathers with a University degree spend slightly more than 3 minutes per day more on this than those without a degree ($p < 0.01$). My main variable of interest to test hypothesis 2 (i. e. the interaction between recession and possession of university degree) shows a small increase in the education effect during the recession (less than 2 minutes) and is not significantly associated with time spent in developmental care, which shows us that the education gap in paternal developmental care time did not wide during the economic recession.

Table 7: OLS regressions – Fathers' time in developmental care.

| | Fathers' time | |
|---|---------------|-------|
| | β | SE |
| Recession | 3.97** | 1.71 |
| <i>Employment status</i> | | |
| Part time | 2.21 | 2.84 |
| Unemployed | 4.92* | 2.06 |
| Inactive | -0.36 | 1.29 |
| <i>Interactions</i> | | |
| Recession * Part time | 3.74 | 3.73 |
| Recession * Unemployed | -4.00 | 2.97 |
| Recession * Inactive | 0.68 | 2.40 |
| <i>Education</i> | | |
| University degree | 3.16** | 1.25 |
| Recession * University degree | 1.87 | 1.92 |
| <i>Partner's controls</i> | | |
| Partner works part time | 4.40* | 1.86 |
| Partner unemployed | 2.98* | 1.51 |
| Partner inactive | 0.04 | 1.15 |
| Partner holds University degree | 3.63*** | 1.03 |
| <i>Sociodemographic and household variables</i> | | |
| Age | -0.13 | 0.28 |
| Age squared | -0.00 | 0.00 |
| Two children at home | 1.12 | 0.89 |
| Three or more children at home | -2.58† | 1.43 |
| Youngest child 5-12 years | -14.37*** | 1.07 |
| Recession * Youngest child 5-12 years | -1.84 | 1.77 |
| Other adults living at home | -4.22*** | 1.14 |
| Weekday | -8.09*** | 0.85 |
| Domestic help | 0.94 | 1.10 |
| <i>Constant</i> | 36.42*** | 6.34 |
| <i>Adjusted R²</i> | | 0.06 |
| <i>N_{couples}</i> | | 5,674 |

Source: Spanish Time Use Surveys.

Note: Results for mothers' time in developmental care not shown but available from the author upon request. Significance levels: † < 0.1, * p < 0.05, ** p < 0.01, *** p < 0.001.

Discussion and conclusion

The present study used the 2007 economic shock to investigate variations in the gender and education gaps in physical and developmental childcare time over the economic cycle, focusing on the role of fathers. In doing so, it makes two relevant contributions to the literature. First, it expands a growing body of literature focusing on the business cycle and paternal involvement in childcare in Europe. Second, it

considers both the age of the children and diverging paternal contributions to childcare. This article contributes to debates on gender inequality in domestic labour and on the intergenerational transmission of advantage. I contribute to these literatures by showing how the economic recession facilitates a better understanding of differential paternal involvement in two types of childcare and, therefore, helps to disentangle the conditions under which gender and education inequalities decrease, persist or increase. To do so I focus on the case of Spain. Unfortunately, no panel data is available for this country. Despite this, the dramatic deterioration of employment conditions make Spain an excellent case for this study.

The results of this study show a compositional change in paternal childcare time, which does suggest that the Great Recession had an effect on variations in childcare time mediated by the labour market involvement of couples. All else being equal, over the period analysed (2002-2010), paternal childcare time increased in both types of care. Particularly interesting is that the biggest increase was in the most gendered type of care (physical). The increase in paternal childcare time is mainly the result of more time spent on caring for children aged 0-5. This result suggests, first, the increasing precariousness of the labour market during the recession, characterised by high male unemployment rates and the intensification of maternal employment. Second, it reflects the discourse about the sacrosanct nature of parental childcare during the “crucial early 5 years” (Heckman, 2006). These results confirming the increase in fathers’ involvement in childcare are in line with all previous research (i.e. Altintas, 2016; Craig et al., 2014).

The first hypothesis posits a narrowing of *the gender gap in physical care* during the Great Recession (H1a) mainly concentrated in couples with very young children and due to an increase of the effect of paternal unemployment and decrease of the effect of paternal education (H1b). The results support this hypothesis, suggesting that during the recessionary period couples responded to the uncertainty generated by austerity by making improved use of available resources, such as fathers’ free time, just as previous research found concerning the US (Knop and Brewster, 2015). Non-working mothers moved into the labour market and fathers responded by spending more time on unpaid tasks (Aguiar et al., 2014; Berik and Kongar, 2013), like

physical care, which is especially demanding at very young child's age. These results are also congruent with previous studies analysing the Great Recession and increases in paternal childcare time in the US (Bauer and Sonchak, 2017; Gorsuch 2016).

These results indicate that several mechanisms are at work. First, I find quantitative evidence for the *compensatory fatherhood* mechanism (Barbeta and Cano, 2017), which suggests that unemployed fathers compensate for feelings of uselessness brought on by the lack of employment by getting more involved in the care of their children. Second, my results are also in line with the *attenuation effect* (Oesch and Lipps, 2013), which suggests that typical dysfunctionalities associated with unemployment such as demotivation for life (including children) are moderated by especially high levels of unemployment: during the recession, unemployed men did not take their *deviated* social position personally but structurally. During recessionary times, couples seem to complement each other by responding to economic shocks using familial flexibility to maintain resilience in a newly precarious situation. More research is needed to explore these mechanisms in countries where the economic crisis did not affect male unemployment as drastically as in Spain (e.g. Germany). Importantly, I find that the effect of education on paternal involvement in physical care reversed in 2010, especially in those families with children under 5 years old. This result suggests that, during recessionary times, the advantage of highly educated parents in tailoring shared activities to their children's age previously found in the US (Kalil et al., 2014) and Spain (Gracia, 2014) might be reduced.

The second hypothesis of this study focuses on the paternal *education gap in developmental care* during the Great Recession. Results indicate that this gap remained unchanged. Fathers significantly increased their participation in developmental childcare, as they did for physical childcare, but the education gap remained. To my knowledge, this is the first study of educational inequality in paternal developmental time during the recession.

A recent study suggests that “parents at all levels of society now aspire to intensive parenting but the less educated and less affluent among them have been less able to put those ideals into practice” (Putnam, 2015: 388). Those (less educated) fathers that are less likely to perform the “concerted cultivation” style of parenting were also those most affected by unemployment. The greater availability of time which these fathers could spend with their children meant that Spain did not manifest the widening education gap in developmental time found in the US (Altintas, 2015) and that the gender gap in physical care reduced. However, gender and education gaps in time with children persist. Mothers continue doing the vast majority of childcare and more educated men continue to adhere more to the “new father” ideal. Importantly, the allocation of time within couples affects children cognitive development (Fiorini and Keane, 2014) and has implications for the social reproduction of inequality.

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