



Demographic Research a free, expedited, online journal
of peer-reviewed research and commentary
in the population sciences published by the
Max Planck Institute for Demographic Research
Konrad-Zuse Str. 1, D-18057 Rostock · GERMANY
www.demographic-research.org

DEMOGRAPHIC RESEARCH

**VOLUME 23, ARTICLE 16, PAGES 445-478
PUBLISHED 27 AUGUST 2010**

<http://www.demographic-research.org/Volumes/Vol23/16/>
DOI: 10.4054/DemRes.2010.23.16

Research Article

**‘Just Living Together’:
Implications of cohabitation for fathers’
participation in child care
in Western Europe**

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Table of Contents

1	Introduction	446
2	Theoretical perspectives: Marital status, gender, and child care	447
3	Research hypotheses	452
4	Data, variables, and sample of countries	453
5	Methods	459
6	Main results of the multivariate analysis	463
7	Conclusions and discussion	469
8	Acknowledgements	470
	References	471
	Appendix	477

‘Just Living Together’: Implications of cohabitation for fathers’ participation in child care in Western Europe

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Abstract

This article tests the assumption that cohabitation makes a difference in the allocation of childcare responsibilities within couples. It has often been assumed that cohabiting individuals are less likely to adhere to traditional gender ideologies than married people, because they tend to have a lower tolerance for poorly functioning relationships, to assign more value to individual freedom, and to base their relationships on egalitarian individualism, rather than on the joint utility maximisation of married couples. So far, however, most studies have focused on the determinants and consequences of being in cohabitation, and have overlooked the gender implications of this living arrangement.

Here we explore whether fathers in consensual unions are more prone than fathers in marital unions to share childcare responsibilities with their female partners. We use multilevel regression models for panel data to analyse ECHP in the period between 1996 and 2001. Our sample included around 13,000 couples living in heterosexual partnerships with small children (at least one child below age 13), and yielded around 45,000 observations over this period of time in 10 Western European nations. We found weak evidence of the influence of cohabitation, relative to marriage, on gender equality, but we also discovered that the diffusion of cohabitation at the societal level is associated with a more equal allocation of child care between partners.

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1. Introduction

This paper was inspired by the argument that cohabiters and married people differ substantially in their gender relationships, notwithstanding the fact that increasing proportions of the married population have experiences of previous cohabitation, often with the person they will later marry. The argument is based on the assumption that cohabiters tend to assign more value to egalitarian individualism, personal autonomy, and equity (Lesthaeghe and Surkin 1988, Thomson and Colella 1992, Brines and Joyner 1999, Björnberg 2001); attitudes which may influence the partner's contribution to the household. This assumption is also used to explain the short-lived nature of cohabitation, and the lower rate of marital success among couples who previously cohabited (Teachman and Polonko 1990, Murphy 2000, Smock and Manning 2004). The differences between cohabitation and marriage in Western societies were studied extensively by demographers and social scientists during the 1980s and 1990s, when cohabitation was an emerging living arrangement, and was generally understood to be a prelude to marriage. Today, however, the boundaries between the two types of partnerships are less obvious, as cohabitation progressively becomes a more permanent mode of living across social groups. Marriage is no longer a prerequisite for childbearing, and societies are moving towards more egalitarian gender relationships. As has been proclaimed by several social scientists, "cohabitation is here to stay" (Toulemon 1996, Ermisch and Francesconi 2000, Kiernan 2004a), although the degree of diffusion of this arrangement, and the meaning and implications of cohabitation for the gender division of labour, still vary substantially across European societies.

The aim of this paper is to test the assumption that cohabiting individuals are less prone than married people to adhere to traditional gender ideologies, in which women assume the main responsibility for child care. In particular, we investigate whether couples in consensual unions share child care duties more equally than couples in marital unions. In order to explore parental time investment in children, we use a relative measure (0%-100%), which captures the time fathers spend on child care (i.e., in couples with at least one child under age 13) in relation to the total time spent on child care by the couple during a regular week. The resulting indicator (the father's share of time spent on child care) is then explored through multilevel regression models using data from the European Community Household Panel (ECHP). The resulting sample consists of around 45,000 observations for 10 Western European countries, comprising around 13,000 couples. There are few studies that assess the time spent by men in married and cohabiting couples on caring activities. Previous research has generally focused on single case studies, and has typically been limited to married unions. This study goes beyond the existing literature by incorporating samples from diverse contexts, and by focusing on consensual unions.

The study is based on snapshots of cross-national data from 1996 to 2001. The short time span and the limited marital history provided by the ECHP (data on cohabitation prior to marriage is missing) do not allow us to explore the impact of family dynamics. We can only make a comparison between individuals who cohabit and those who are married in any given year. This may be somewhat problematic, since marriage is not a stable and homogeneous category, especially in countries where cohabitation is highly diffused and frequently precedes marriage. Unfortunately, we cannot detect whether married couples who cohabited before marriage divide up household tasks in the same way as they did before getting married. Nevertheless, the data allow us to explore possible differences in the proportion of child care responsibilities assumed by fathers across union types.

The structure of this paper is as follows. In the next section, we discuss the potential differences between cohabiting or consensual unions (we use both terms interchangeably) and marital unions. We then connect the theories on the transformation of living arrangements with the explanations for the increase in men's participation in child care activities, and derive the main working hypotheses. In the following section, we describe the survey, variables, and models used to deal with the hierarchical structure of the panel data (respondents observed across waves and countries). The final section presents the results and main implications of cohabitation for the gender division of child care activities.

2. Theoretical perspectives: Marital status, gender, and child care

Cohabitation is becoming a popular living arrangement among young cohorts in most Western European countries (Bumpass and Lu 2000, Murphy 2000, Raley 2001, Heuveline and Timberlake 2004, Kiernan 2004a, Kiernan 2004b, Baxter 2005, Castro and Domínguez 2008). According to Festy (1980), the so-called “golden age of marriage” prevailed in Western European nations from the 1950s to the early 1970s, and marriage rates have declined ever since: the average age at marriage has increased, the stability of relationships has decreased, and non-marital cohabitation is increasingly accepted—albeit with large differences among countries in the prevalence of cohabitation. This living arrangement has become especially prevalent among divorced people, either as an alternative or a prelude to remarriage, and among young people marking the formation of a union (Bumpass and Lu 2000, Kiernan 2000 and 2004a, Ermisch 2005).

Demographic studies indicate that cohabiting couples have distinct features that set them apart from married couples. First, they face a higher risk of the dissolution of their partnership (Bumpass and Lu 2000, Murphy 2000, Smock and Manning 2004).

Marriages that began with cohabitation also seem to be more prone to breaking up than marriages with no history of cohabitation (Smock and Manning 2004), although this depends on the level of cohabitation in the country (Liefbroer and Dourleijn 2006). Cohabitation has also been related to a higher proportion of childlessness and births outside of marriage (Bachrach 1987; Raley 2001; Baizán, Aassve, and Billari 2003; Ermisch 2005), higher levels of educational homogamy (Schoen and Weinick 1993), more hours in paid work for women (Abroms and Goldscheider 2002, Kalmijn 2007), and a higher proportion of rented dwellings (Murphy 2000, Raley 2001). Additionally, cohabitation has been linked to more distant father-child relationships and to fathers spending less time with their children (Hofferth and Anderson 2003). Cohabiting couples also experience disadvantages in some countries where legal traditions and family ideologies favour marital unions in matters of social security and in the recognition of certain legal rights (Bradley 2001, Le Goff 2002). Demographic and legal differences notwithstanding, the growing prevalence and acceptance of consensual unions across Europe makes a reexamination of differences between cohabiting and marital unions potentially important, especially regarding the division of family responsibilities, and specifically of child care. In exploring these issues, we need to understand the context in which cohabitation has come to exist. We will attempt to do this by looking at the recent transformation of cohabiting and marital unions in Western societies, and by analysing why cohabitation may have implications for the gender division of labour.

The diffusion of cohabitation has generated much discussion about its real significance, and the extent to which this living arrangement has become a substitute for marital unions. Kiernan (2000, 2004a) has used the example of the Swedish population, for which a number of stages were identified by Hoem and Hoem (1988), to classify the Western European countries based on degrees of cohabitation diffusion. According to this author, cohabitation mainly appears in the first stage as a deviant phenomenon practised by a small group of the single population. In the second stage, the arrangement mainly represents a prelude or probationary period in order to test a relationship prior to committing to marriage, normally without children. In the third stage, cohabitation becomes socially accepted as an alternative to marriage, and even includes children. In its fourth and final stage, cohabitation and marriage become indistinguishable partnership types, with children being born and reared within both unions. The final typological classification divides Western European nations into three large groups. The highest levels of cohabitation are found in countries that have made the transition to the final stage, such as Denmark, Sweden, and Finland; closely followed by France, which has relatively high levels of cohabitation. The middle level is found in the Netherlands, Belgium, Great Britain, West and East Germany, and

Austria. The lowest level is found in Southern European countries and Ireland, where cohabitation is, even today, only practised by a minority.

In the above-mentioned diffusion process, Sweden is an extreme case: in this country, it appears that no specific characteristics are attached to either type of union, whether marital or consensual. On average, cohabiting relationships in Sweden last nearly as long as marriages, and they even display similar fertility patterns (Bracher and Santow 1998). However, researchers such as Björnberg (2001) argue that, even in Sweden, cohabiting couples are indeed very heterogeneous; and that, despite the relative importance of this arrangement in society, cohabitation has not replaced marriage as an institution. Björnberg portrays cohabitation among young people as a practical solution in romantic relationships of uncertain duration, or in relationships in a “trial phase,” and concludes that many of these unions eventually convert into marriage or separation.

Another contrasting model is found in the U.S., where living together without being married is mainly meant to occur during the last stage of the courtship process, before the union is legalised by a “proper contract.” Although cohabiting is gradually becoming a more permanent arrangement, Heuveline and Timberlake (2004) conclude that cohabiting individuals are more similar to single individuals than to married ones, as far as behaviour and expectations are concerned. Oppenheimer (2003), however, attributes the rise of cohabitation in the U.S. to increasing employment instability among young men, for whom this type of arrangement is best understood as an “adaptive strategy” during a period of career immaturity. Smock and Manning (2004) also observe that, although cohabitation has become a common arrangement throughout the socioeconomic spectrum, it plays different roles for different social classes. They find that cohabitation is more prevalent among those with fewer economic resources (i.e., low income or high poverty rates), and thus represents a sort of “poor man’s marriage;” while those with higher education and good economic prospects are more likely to become married, to stay married, and to have children within marriage.

The diffusion of cohabitation across countries and time has been partly explained by contextual factors, such as the popularity of this arrangement among peer groups (Nazio 2008), the transmission of more tolerant attitudes in living arrangements operating through a “social contagion” (Ermisch 2005), and the legal recognition of cohabitation. Additionally, the characteristics of the housing market play a role (Nazio and Blossfeld 2003), possibly inhibiting cohabitation in countries with a high prevalence of homeownership, as is the case in Southern Europe (Jurado-Guerrero 2001). Other factors often associated with cohabitation are the levels of educational attainment across the population, since highly educated individuals may be more prone to transgress norms regarding partnership formation; and homogamy patterns by age, occupation, or education. More “innovative” matching (i.e., role reversal, in which

women are either the primary wage earners or have more education than their male partner) may be associated with more flexible living arrangements, such as cohabitation (Miret-Gamundi 2007).

Previous examples suggest that family models are in a constant process of transformation, while even marital unions have transformed substantially, with many married couples holding less traditional gender role attitudes than in the past (Rogers and Amato 2000). It is difficult to provide a single, yet multifaceted portrait of cohabitation and marriage within Western societies. It remains unclear whether cohabiting couples are a distinct group as far as gender relations are concerned, or whether they are different due to composition effects (i.e., whether they represent a selective group of individuals). To that end, it is important to understand the main factors that influence the gender division of child care, and, in particular, the role of cohabitation in fostering more egalitarian gender relationships.

Before embarking on our analysis of the factors that influence the gender division of labour, we should point out that, so far, only a few studies have analysed the gender implications of forming a marital or consensual union, particularly in the area of child care. Most studies have focused on the gender division of domestic work (Shelton and John 1993, Fuwa and Cohen 2007), and the effect of premarital cohabitation on the division of household labour (Gupta 1999, Batalova and Cohen 2002, Fuwa 2004). Furthermore, child care has been frequently analysed within the general notion of “household chores” (which may include, for example, cooking, cleaning, laundry, and other routine domestic activities) using samples of married couples (South and Spitze 1994; Gupta 1999; Bianchi, Milkie, and Sayer 2000), even though recent studies have shown that the determinants of parents’ participation in child care and housework activities are very different (Deding and Lausten 2004). For example, caring for offspring is usually ranked very highly in importance by both parents, but this does not necessarily apply to household chores (Juster and Stafford 1991, Bianchi et al. 2004). Caring for offspring is also particularly valued among more educated parents (Meil-Landwerlin 1997; Sayer, Bianchi, and Robinson 2004), who are more aware of the long-term consequences of care for child development and well-being (Deutsch, Lussier, and Servis 1993, Bronte-Tinkew et al. 2008).

As we noted above, the type of union has been assumed to influence the division of labour within couples, and, in particular, the time spent on child care. According to researchers such as Lesthaeghe and Surkyn (1988), Thomson and Colella (1992), Björnberg (2001), Martin and Théry (2001), Ostner (2001), Liefbroer and Dourleijn (2006), and Pasquini and Samoggia (2007), cohabiting individuals are less likely than married people to adhere to traditional ideas about gender roles, because they tend to assign more value to individual freedom within the partnership, basing their bond on egalitarian individualism rather than on the joint utility maximisation of married

couples. Consensual unions are based on more individualised lifestyles, which reflect both a lower degree of commitment to their families, and a lower tolerance for poorly functioning relationships; while married men and women tend to embrace more traditional views on the family, as well as a gendered division of labour (Björnberg 2001). All in all, it is plausible to expect that men living in consensual unions will display more egalitarian gender behaviour, and that they have a greater willingness than married men to share equally in daily domestic and child care activities. This argument may be particularly relevant in countries where cohabitation is relatively uncommon, and is therefore practised by a rather select group of individuals. In these contexts, marital and cohabiting unions may have substantially different meanings. However, a study by Kalenkoski, Ribar, and Stratton (2007) on the United Kingdom and the United States found no evidence that cohabiting and married parents allocated different amounts of time to child care.

Gender differences in the division of time dedicated to child care and housework have traditionally been interpreted using economic and rational choice theories (i.e., Becker 1981). From this perspective, time allocation for housework and paid work have nothing to do with the type of union, but with the relative efficiency of husbands and wives in the market and household sectors. A similar approach is represented by the so-called “time availability hypothesis” (Gupta 1999, South and Spitze 1994), which asserts that time devoted to paid work fully determines the gender division of housework in couples, and that only the time remaining after paid work is bargained for between the partners. However, bargaining process or relative resource theories view the division of domestic labour as a negotiation between partners (Stancanelli 2003, Geist 2005), in which those individuals with the better bargaining position (i.e., earning capacity) reduce their share of time devoted to domestic work.

The main drawback of economic time allocation theories is that the division of work and childcare between parents is mainly interpreted as the result of maximised family utility, while the effects of gender socialisation and role attitudes on individual choices are largely ignored (South and Spitze 1994, Cunningham 2001). Child care and domestic chores are, for example, valued differently by gender, with men more frequently rating domestic work as a less rewarding task (Bianchi et al. 2004). Therefore, economic and rational choice theories provide a valuable, but insufficient, framework for understanding the gender division of labour within the family. In contrast, the gender perspective takes into account other elements that shape the allocation of time to unpaid tasks, such as the reproduction of unequal power relations between women and men, or the display of men’s masculinity by refusing or being reluctant to participate in domestic and caring activities as a way of reinforcing male structural and cultural power (Brines 1994, Risman 1998). This would partly explain why women continue to spend more time in total unpaid work than men (Sayer 2005).

Micro-level processes, such as time availability, relative resources, and gender ideologies are important determinants of the division of housework, but contextual factors can also influence couples' behaviour in different ways (Geist 2005). Contextual factors can be of a cultural nature, such as the gender ideology that prevails in a given society, or the degree of women's empowerment in the public sphere (Fuwa 2004); or of a political nature, such as the work-family policies embedded in different welfare state regimes (Geist 2005). Fuwa and Cohen (2007) have demonstrated that housework activities are more equally shared between the genders in countries with an absence of discrimination against women in access to employment, as well as in countries with entitlement to long parental leaves. Geist (2005), on the other hand, identifies different levels of equal sharing of housework according to welfare state regimes, while controlling for micro-level processes. In this model, conservative regimes (e.g., Japan, Italy, and Austria), which support traditional gender relations, display lower levels of equal sharing, while social democratic regimes (e.g., Sweden and Norway) display higher levels. Liberal regimes (e.g., Australia, New Zealand, Great Britain, the United States, and Canada) provide heterogeneous results. The study of the specific mechanisms that operate at the macro level to influence couples' allocation of time to child care is very promising, but more research is needed on the topic.

3. Research hypotheses

As described above, it is well-established in the literature that relative resources, time availability, and women's bargaining power determine the gendered partitioning of child care and domestic activities. It is also clear that the institutional context and prevailing gender values may influence women's abilities to negotiate family matters within the partnership, although, thus far, there is little evidence suggesting that there is a direct connection between national policies and couples' sharing of domestic and caring activities. In this study, we aim to test additional hypotheses relating to the motivations for consensual unions that may have implications for parental participation in child care activities:

1. *The couples' homogamy hypothesis*: It is not the condition of living in a consensual union that explains more egalitarian gender roles, but rather the fact that the union is between equals (educational homogamy).
2. *The "marriage with the loan" hypothesis*: Individuals living in consensual unions who have made the transition to homeownership are very similar to marital unions as far as gender roles are concerned, since both types of couples have entered into long-term commitments.

3. *The selection effect hypothesis:* In countries with a low prevalence of cohabiting unions, there will be a higher selection effect. Individuals who are more committed to gender equality are more prone to be in consensual unions. Therefore, cohabiting men in countries where cohabitation is not yet widespread will spend more time caring for children,
4. *The alternative hypothesis:* None of the above statements are true, since cohabitation is simply a matter of fashion among young adults, and does not necessarily entail more egalitarian relationships (i.e., an equal share of child care).

In the next sections, we describe the survey, the samples, and the method used to capture the hierarchical structure of the data, which consists of repeated observations (panel data) of respondents nested within countries.

4. Data, variables, and sample of countries

Our empirical research is based on the European Community Household Panel (ECHP). The ECHP is a survey consisting of eight waves, running from 1994 to 2001, and is based on a standardised questionnaire involving annual interviews of a representative panel of households and individuals in each country. The topics covered include income, health, education, housing, demographic, and employment characteristics. Here, we explore whether the share of child care responsibilities assumed by fathers varies according to whether the fathers are married or cohabiting. The response variable, based on the survey question (“Roughly how many hours per week do you spend looking after children?”), was not incorporated into the survey until 1995. Moreover, Austria did not join the survey until 1996. For these reasons, only the third through the eighth waves (years 1996-2001) are included in the study. Individuals who are not in a union are excluded.

The ECHP provides a unique set of data that is suitable for cross-time, and cross-country comparative analyses. However, the ECHP dataset also has some limitations that have important implications for our study, including the fact that it contains incomplete information on the marital histories of individuals. Only the marriage date was captured, while no information was collected on prior relationships or experiences of cohabitation. Thus, we cannot make a distinction between individuals who marry directly and individuals with premarital experiences. That means that we cannot account for the heterogeneity of the married category, which may in turn have implications for possible differences in gender relations.

The period considered in this study covers six years of panel data (see Table 1). The sample consists of fathers and their female partners (observed annually during the period 1996-2001) living in heterosexual partnerships, with at least one child under age 13, and who declared that they made weekly time investments in child care within the nuclear family (i.e., those who answered the question: "Do your present daily activities include looking after children, whether your own or other, without pay?"). Couples were checked wave by wave, and they were included in the study for the years when they met the requirement of having at least one child under age 13.

Table 1 shows the main panel data characteristics according to the year of observation and the country of residence for an unbalanced panel, which means that not all individuals have observations for all years; some individuals may have disappeared at some point, and new ones may have entered between 1996 and 2001. The table provides descriptive statistics of overall, between and within variations. "Overall" refers to the whole dataset (n=46,415 observations), and captures the number of observations (couple-years) in each year and in each country. "Couple-years" are those observations that meet the requirements for inclusion in our sample: i.e., heterosexual couples with at least one child under age 13. "Between" refers to the number of couples observed in a given year and in a given country. There were, for example, 9,152 observations in 1996, which represented 19.72% of total observations (overall percentage), despite the fact that only 67.81% of couples (between percentages) were observed in that year. Had we relied on balanced panel data, in which all couples had observations for all years, "between frequencies" would have been 100%. On the other hand, "between frequencies" in the country of residence captures the number of couples by country. Thus, for example, there were 830 Danish couples contributing to 2,811 observations over the period of analysis. Finally, "within" refers to couples who were observed over the period of analysis in a specific category of the explanatory variables. Thus, for any given year, we can see the percentage of couples being observed. For example, we know that 38.12% of couples were observed in 1996 alone, while the percentage of couples being observed just for one year went down to 29.14% in the following wave (1997). For countries of residence, "within" reaches percentages of 100% due to the fact that the country of residence is a fixed characteristic; i.e., it does not change over the period of analysis.

Table 1: Descriptive statistics of the sample: Waves and countries included in analysis

		Overall		Between		Within
		Freq.	Percent	Freq.	Percent	Percent
Year of Observation (wave)	1996	9,152	19.72	9,152	67.81	38.12
	1997	8,557	18.44	8,557	63.40	29.14
	1998	7,886	16.99	7,886	58.43	24.90
	1999	7,367	15.87	7,367	54.58	24.07
	2000	6,869	14.80	6,869	50.89	25.19
	2001	6,584	14.19	6,584	48.78	31.11
	Total (N)	46,415	100.00	46,415	343.89	29.08
(n = 13,497)						
Country Of Residence	Denmark	2,811	6.06	830	6.15	100.00
	Belgium	2,918	6.29	896	6.64	100.00
	France	5,191	11.18	1,656	12.27	100.00
	Ireland	3,762	8.11	1,040	7.71	100.00
	Italy	8,003	17.24	2,227	16.50	100.00
	Greece	5,186	11.17	1,368	10.14	100.00
	Spain	6,786	14.62	1,974	14.63	100.00
	Portugal	4,655	10.03	1,419	10.51	100.00
	Austria	3,363	7.25	928	6.88	100.00
	Finland	3,740	8.06	1,159	8.59	100.00
	Total	46,415	100.00	13,497	100.00	100.00
(n = 13,497)						

Source: ECHP 1996-2001 (unweighted data).

Apart from the type of union (married or cohabiting), the following independent variables have been included in the analysis at the individual level (see also Appendix 1 for further details):

- *Sociodemographic variables*: Men's age (simple and squared factors to reflect the age exponential distribution), men's employment status (a dummy variable), household composition measured by the number of children living at home and the age of the youngest child, men's education (three main categories included in the models as a dummy variable), and the availability of intergenerational support (a dummy variable accounting for the presence of someone from a third generation, a grandparent, at home).
- *Control for the time availability argument*: Mothers' working hours (continuous variable), including paid overtime, in the main job or business.
- *Control for the women's relative resources argument*: Mothers' contributions to the household income (continuous variables that capture the effect of a mother's net monthly income in relation to the couple's net monthly income) together with women's working time.

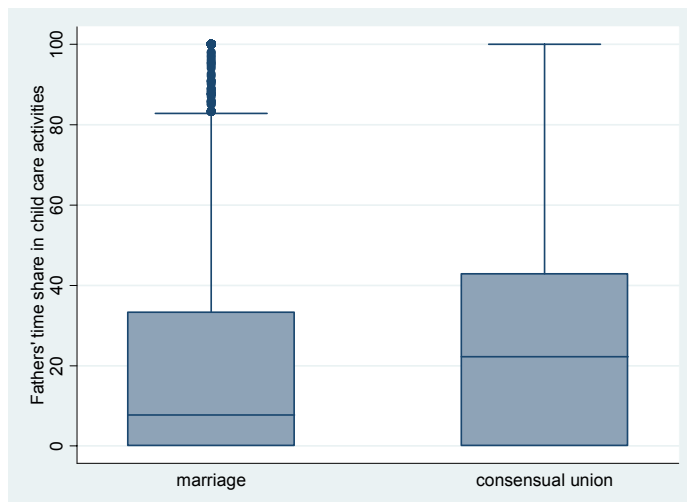
- *Control for the couples' homogamy hypothesis*: A dummy variable for a match between the mothers' and the fathers' educational levels, which serves as a proxy for a "union between equals."
- *Control for the "marriage with the loan" hypothesis*: A dummy variable indicating whether the dwelling is owned, rented, or provided free of charge. Housing tenancy is also introduced in the model according to the type of partnership.

Country of residence and year of observation (Waves 1996-2001) are random variables in Models 1 and 2. Country is also included as a fixed dummy variable in Model 3 to test for the net effect of country of residence, and a continuous variable indicating the percentage of cohabiting couples at the country level is included in Model 4 to test for "the selection effect hypothesis." Thus, the extent to which the diffusion of cohabitation at the societal level influences the father's share of time spent on child care is investigated.

Figure 1 illustrates the first empirical evidence of the main differences between the two types of unions with respect to the share of child care activities assumed by fathers. As illustrated in the box-plot, this simple descriptive statistic (quartiles) indicates that fathers in consensual unions take on a greater share of the total time spent caring for children than fathers in marital unions. Nonetheless, there may be many composition effects producing this outcome, such as the fact that more homemaking women may be found within married couples.

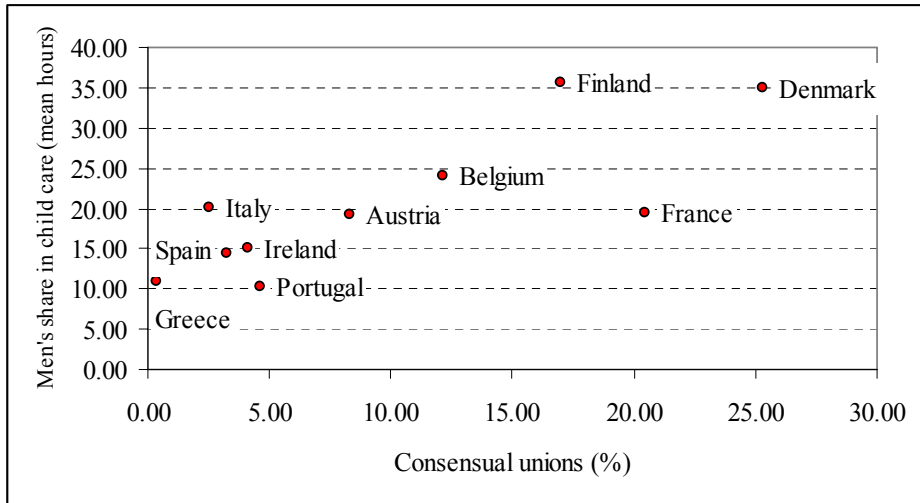
We have also explored country differences in fathers' share of child care time, and in the prevalence of consensual unions. The resulting picture roughly resembles Kiernan's typology of cohabitation (Kiernan 2004a). As Figure 2 illustrates, Greece, Spain, Portugal, and Ireland score very low in both the share of time spent in child care, and in the prevalence of consensual unions; Finland and Denmark score very high in both, and the other countries follow a distinct pattern somewhere in the middle.

Figure 1: Box-plot of fathers' share of time spent on child care (at least one child aged 0-12), according to marital status: Selected European countries, 1996-2001



Source: ECHP 1996-2001

Figure 2: Fathers' share of time spent on child care (at least one child aged 0-12) and the proportion of consensual unions by country, 1996-2001



Source: ECHP 1996-2001

France holds a position similar to that of the Nordic countries in the diffusion of cohabitation, yet maintains a medium position on the share of time fathers spend on child care. This may be explained by the fact that France has traditionally had a supportive policy framework for working mothers with young children, but lacks specific policies for developing more equal parenting roles between men and women (Windebank 2001). Windebank (2001) has suggested that French fathers do not participate in domestic labour and parenting work, as would have been expected given the rise of female employment rates, because of the persistence of patriarchal attitudes, which has resulted in a “double burden” of paid and unpaid work for women.

The sample of countries analysed here provide a wide range of situations in terms of the diffusion of cohabitation and levels of participation by fathers in child care activities. This sample also shows that there are major differences in gender inequalities at the societal level, particularly in the degrees of institutional support for reconciling paid and unpaid work. Table 2 shows that Southern European countries have the lowest female activity rates, with the exception of Portugal, which has rates above those of the European Union-15; the lowest share of children under three in child care centres; and low rankings in the Gender Empowerment Measure (GEM), which captures inequalities

between men's and women's opportunities in a country. Austria, Belgium, and France have mixed indicators: the GEM rankings of these countries are somewhere in the middle, female activity rates are around or above those of the EU-15, and child care provision levels for children under age three are relatively high (30%), with the exception of Austria (15%). In contrast, Denmark, closely followed by Finland, is the country that scores highest in female activity rates, child care coverage, and GEM. After looking at this sample of countries, a question arises: To what extent is the participation of fathers in child care influenced by living in a particular type of union in a country with specific levels of cohabitation? This is an issue that will be addressed in the empirical analysis. In the following, we describe our research methodology.

Table 2: Selected indicators of gender inequalities and state support for working mothers

	Female activity rates (age group 25-54), 2009	Gender Empowerment Measure, 2007	Children in child care (%)- age group 0-2
Australia	88.2	7	13 (2001)
Belgium	85.1	6	30 (2000)
Denmark	89.6	4	64 (1999)
Finland	88.5	3	25 (2003)
France	89.0	17	30 (2001)
Greece	82.9	28	3 (2000)
Ireland	80.8	22	12 (1997)
Italy	77.5	21	6 (1998)
Portugal	88.1	19	22 (2002)
Spain	84.7	11	10 (2002)
EU-15	85.4	--	--

Sources: Female activity rates were provided by EUROSTAT (online statistics); GEM (this is an average index for political participation and decision-making power, economic participation, and power over economic resources) was provided by the United Nations Development Programme (UNDP) (available online: http://hdr.undp.org/en/statistics/indices/gdi_gem/); child care rates were provided by Immovoli and Barber (2005); data for Spain were obtained from González (2005).

5. Methods

We use hierarchical models structured into three levels, with observations nested in respondents (panel data), and respondents nested in countries. We included 46,415 observations, corresponding to 13,497 couples nested in 10 countries (Denmark, Belgium, France, Ireland, Italy, Greece, Spain, Portugal, Austria, and Finland). The response variable is a continuous measure of the relative amounts of time invested by fathers in child care (0%-100%). The sample includes cases in which there are reports

of no time at all dedicated to child care activities. This variable is based on responses to “Number of hours (per week) spent looking after children (PR007A),” in which individuals reported one to 96 hours, -8 (not looking after any children) and -9 (missing). Those reporting -8 were included in the analysis as equivalent to zero hours. It should be noted that care is measured in a very broad sense; we only capture the number of hours, without distinguishing the type of activities fathers perform with children.

The multilevel approach takes advantage of both the hierarchical structure of the ECHP, in which individuals are nested within countries, and the longitudinal structure of the ECHP, in which observations are clustered in respondents. First, we take a sample of units from the higher level (i.e., countries); second, we sample the subunits from the available units (i.e., we sample individuals from the countries). In this type of sample, individual observations are generally not completely independent. The average correlation (expressed in the so-called “intra-class correlation”) between variables measured with individuals from the same country will be higher than the average correlation between variables measured with individuals from different countries. Standard statistical tests lean heavily on the assumption of the independence of the observations. If this assumption is violated (and this is usually the case in multilevel data) the estimates of the standard errors of conventional statistical tests are much too small, resulting in many spuriously “significant” results. The same applies to multiple observations for a single individual in panel data. Consequently, multilevel modelling is the appropriate approach for dealing with the ECHP data. We are concerned, however, by the fact that we rely on a reduced number of cases, as it is desirable to have as many units as possible at the top level of the multilevel hierarchy (i.e., country level).

We first fit a three-level variance-component model with a random intercept for each respondent-country combination ($\zeta_{jk}^{(2)}$), and another random intercept for country k ($\zeta_k^{(3)}$). We accommodate heterogeneity between respondents in each of the six waves with $\zeta_{jk}^{(2)}$ (see Table 3).⁴ This three-level model without covariates can be written as:

$$y_{ijk} = \beta_1 + \zeta_{jk}^{(2)} + \zeta_k^{(3)} + \varepsilon_{ijk}$$

where the index i is for waves, j is for respondents, and k is for countries. $\zeta_{jk}^{(2)}$ is the random intercept for respondent j and country k , and $\zeta_k^{(3)}$ is the random intercept for

⁴ We have used the `xtmixed --` Multilevel mixed-effects linear regression command for STATA.

country k . The random effect for a respondent is nested within countries, which means that it takes on a different value for each combination of respondent and country.

As seen in Table 3, the standard deviation between countries, $\sqrt{\psi^{(3)}}$, is estimated at 8.34, and the standard deviation between waves, $\sqrt{\psi^{(2)}}$, is estimated at 14.35. Finally, the $\sqrt{\theta}$, estimated at 18.36, displays the estimated standard deviation of the overall error term. The estimated intra-class correlation between waves in the same country for the same individual is $\hat{\rho}(\text{subject}, \text{country}) = 0.45$, and the corresponding estimated intra-class correlation for different countries is $\hat{\rho}(\text{country}) = 0.34$.

Table 3: Maximum likelihood estimates of the three-level model for fathers' share of time spent on child care

	Coefficient	Standard error	P>z
Fixed part			
Constant	20.299	2.651	0.000
Random part (standard deviation)			
Between countries	8.366	1.879	
Between waves (years)	14.355	0.143	
$\sqrt{\theta}$	18.362	0.071	
Log likelihood	-208,123		
Correlation:			
Between waves within countries	0.450		
Between countries	0.336		

Source: ECHP 1996-2001.

We can now allow for systematic differences (or biases) between countries, k , by including a categorical variable, x_k , for each country in the fixed part of the model. Maximum likelihood estimates for this model, which also include a fixed effect for the country of residence, are displayed in Table 4. The model thus includes two factors or effects: country of residence and respondents, with observations treated as replicates. “Country” is a fixed factor, whereas “respondent” is a random factor. Thus, the model in Table 4 includes an overall effect for each country, a main effect for the individual, and an individual effect by country interaction. This random interaction takes on a different value for each respondent and country combination, and is therefore nested within respondents. It can be interpreted as the respondent-specific bias of the countries.

Table 4: Maximum likelihood estimates of the three-level model for fathers' share of time spent on child care, by country of residence

	Coefficient	Standard error	P>z	% Fathers' time
Fixed part				
Denmark	10.591	1.544	0.000	34.698
Belgium	24.107	0.669	0.000	24.107
France	-4.829	1.247	0.000	19.278
Ireland	-9.356	1.396	0.000	14.751
Italy	-4.169	1.114	0.000	19.938
Greece	-13.140	1.263	0.000	10.967
Spain	-9.411	1.161	0.000	14.696
Portugal	-14.252	1.293	0.000	9.856
Austria	-4.528	1.453	0.002	19.580
Finland	11.063	1.387	0.000	35.170
Random part (standard deviation)				
Between countries				
Denmark	1.208			
Belgium	0.268			
France	0.910			
Ireland	1.059			
Italy	0.759			
Greece	0.919			
Spain	0.813			
Portugal	0.957			
Austria	1.115			
Finland	1.055			
Total (between countries)	9.063			
Between waves	14.359			
$\sqrt{\theta}$	18.3584			
Log likelihood	-208,097			
Correlation				
Between waves, within countries	24.107	0.669	0.000	24.107
Between countries	-4.829	1.247	0.000	19.278

Source: ECHP 1996-2001.

These values clearly demonstrate the significant country differences in the amounts of time invested by fathers in child care. Finland and Denmark stand out due to the relatively high proportions of child care assumed by fathers, with fathers contributing around 35% of the time couples spend on child care. Belgium, France,

Austria, and Italy are somewhere in the middle, with fathers taking on around 20%-25% of child care hours. Finally, countries such as Ireland, Portugal, Spain, and especially Greece are at the bottom, with fathers handling around 10%-15% of childcare responsibilities. These results are not surprising given the low rates of women's labour force participation in countries such as Greece or Spain. Women's labour force participation clearly influences differences between countries in men's levels of participation in child care activities. Next, we analyse the extent to which differences in the amount of time fathers spend on child care are attributable to personal characteristics, such as the type of partnership, or to contextual specificities within countries.

6. Main results of the multivariate analysis

We now turn to the multivariate analysis in order to test the implications of the explanatory variable "living in cohabitation" for the response variable "fathers' time share in child care activities" across a sample of Western European countries. It should be noted that cohabiting fathers with at least one child under age 13 are a minority in the sample: they only represent 8.3% of all unions (average prevalence between 1996 and 2001), while the other 91.7% of the sample are in marital unions.

Results of the multivariate analysis are summarised in Table 5, which contains four statistical models. All models include sociodemographic variables, such as the father's age and household composition. Model 1 also includes fixed-effect coefficients on the father's employment and education, housing tenancy, and the mother's working hours and education. Model 2 includes the income contribution of the mother to the household economy, the couple's educational homogamy, and a composed variable capturing the effect of housing tenancy by type of living arrangement. There are two models, including variables at Level 3 (macro variables): these are Model 3, in which the country of residence is a categorical variable; and Model 4, which contains an interaction term of the percentage of cohabiting couples in the country (macro variable) and the type of union (micro variable). In contrast to the null model, the inclusion of new variables in consecutive models partially reduces country level variance, while other component variances remain at quite similar levels.

We begin by commenting on the main control variables. Model 1 reveals the effect of the household structure (i.e., the number of children, the age of the youngest child, and the presence of a grandparent), which serves as an indirect measure of the child care burden. The results are clear-cut: as the number and the ages of children rise, the proportion of child care assumed by the father tends to decrease. Men seem to share the burden of child care more equally with their partner at the beginning, when care is more

demanding, but they reduce their share afterwards, particularly when children are nine years old or older. The effect of the number of children should, however, be interpreted with caution, due to endogeneity arising from the fact that large families may have more traditional family values, and display a more rigid gender division of child care. Results also indicate that the presence of a grandparent at home discourages fathers from spending more time on child care; a finding which is especially relevant in certain countries, in particular in Southern Europe, where the extended family may play a major role in child care provision.

Moreover, we have controlled for the effect of time availability, measured as the number of hours spent by female partners in paid work. In line with theoretical models (South and Spitze 1994, Stancanelli 2003), the number of hours mothers spend working appears to be positively associated with an increase in the share of child care time assumed by fathers with small children. The more women are absent from the household, the higher the proportion of child care time taken up by fathers. The relationship of fathers to the labour market is also a relevant factor in understanding degrees of participation in child care. Fathers employed in the public sector are far more likely to share child care time than fathers employed in the private sector. Thus, it appears that public sector employment continues to be the best option for balancing family-work responsibilities for mothers and fathers alike (Meil-Landwerlin 1997). The opposite applies to self-employed fathers, who are much less likely to share time spent on child care than fathers employed in the private sector, probably due to their greater difficulties in reconciling paid and family responsibilities.

Model 1 also shows the net effect of father's and mother's education on sharing child care. As predicted by authors like Bianchi et al. (2004), there is a strong correlation between parents' educational attainment and the time spent caring for children. Thus, the higher the educational level of the father, the more time he is likely to spend on child care. Interestingly, the educational attainment of mothers appears to have an even stronger effect on fathers' behaviour (see coefficients in Model 1) than men's education. Thus, living with a highly educated mother increases a typical man's share by 3.69 (at $p < 0.001$), whereas the effect of a father being highly educated is only 1.95 (at $p < 0.001$). In Model 2, we additionally control for the effect of mothers' bargaining power, measured as women's contributions to the family income. As was found to be the case for time availability, mothers' income contributions is also shown to have a clear effect: i.e., the greater the mother's contribution, the greater the father's share of child care. This confirms that women's bargaining power in the household contributes to a more equitable sharing of family responsibilities.

In the following, we comment on the results of the hypotheses tested. As shown in Model 1, and contrary to our expectations, living in rented dwellings, relative to owning a home (reference category), does not seem to significantly increase the likelihood that

fathers will spend more time on child care. We only find significant, although weak, results among fathers in dwellings provided for free, as they appear to be less likely to share time spent on child care than fathers in owned dwellings. The idea behind the variable of housing tenancy was that joint homeownership, irrespective of marital status, will resemble marital unions in that purchasing a home also entails accepting a long-term commitment. In order to test this hypothesis, we tested in Model 2 the joint effect of being married or cohabiting by housing tenancy. In contrast to our expectations, the coefficients indicate that fathers living in marital unions in dwellings provided for free are less prone to sharing child care responsibilities than married homeowners, whereas we do not find significant differences between cohabiting and married couples in owned and rented dwellings. We therefore reject the *marriage with the loan hypothesis*. It should be noted, however, that there is a methodological shortcoming in capturing this effect, owing to the fact that partnership formation and homeownership may occur almost simultaneously. Actually, most of the couples with small children in our sample were either homeowners or lived in rent-free housing (80%).

Model 2 tests the extent to which a union between equals positively affects fathers' share of time spent on child care (i.e., *couples' homogamy hypothesis*). This is a measure of partners' relative resources, which may influence family issues, such as the question of who will take care of the children. It should be noted that the effects of variables already present in Model 1 do not change much in Model 2, in which other explanatory variables have been added. The results for educational homogamy are straightforward. In contrast to more traditional couples, in which men tend to have higher educational levels than women (our reference category), those couples in which women have higher educational attainment ($\beta = 1.49^{***}$), and especially highly educated couples with education parity ($\beta = 3.46^{***}$), tend to share time spent on child care more equally. In contrast, couples in which both partners have low levels of education show the lowest proportion of child care time assumed by fathers ($\beta = -1.38^{***}$), indicating that only parity in higher education fosters a more equal sharing of family responsibilities.

We now comment on the main variable of interest: the effect of living in consensual unions on the proportion of time spent by fathers on child care. As was hypothesised above, we find that being in a consensual union has a significant and positive effect on fathers' share of time spent on child care activities ($\beta = 0.80^*$), when we only control for individual variables, such as household composition, fathers' education, and labour force participation, and for mothers' bargaining power (see Model 1 in Table 5). The effect disappears, however, when we include contextual variables in Models 3 and 4. Therefore, we reject the hypothesis that cohabitation

matters for gender relations, and, more specifically, for fathers' participation in child care. What other factors may encourage fathers to spend more time on child care?

Model 3 includes the country of residence, and reveals that the contextual level significantly influences the likelihood that a father will spend time caring for his children. Denmark is the country where fathers assume the greatest share of child care, while Portugal and Greece are the countries where fathers spend the least amount of time looking after their children. As noted previously, studies such those by Geist (2005), Fuwa (2004), and Fuwa and Cohen (2007) have shown that differences in social policy design embedded in the nature of a welfare state regime, gender values, and gender empowerment at the societal level may lie behind these country effects. The study of the institutional context is, however, beyond the scope of this analysis. Instead, Model 4 analyses *the selection effect hypothesis* by including an interaction term with a macro-level variable, or the percentage of cohabiting couples across countries; and an individual-level variable, or the type of union. Contrary to our expectations, we do not find a selection effect. The results reveal that it is not the living arrangement type, but the diffusion of cohabitation in a society that matters for fathers' participation in child care. We may hypothesise that countries with a large prevalence of cohabiting couples, indicating a growing pluralisation of family life and flexible gender arrangements, may have also experienced other changes at the cultural and institutional levels which have led to a greater gender equity. This is only a hypothesis, since the short time span of the ECHP data does not allow for a proper assessment of the causality of the process, particularly not to the extent that would enable us to discern whether the increase in cohabitation produces greater demands for gender equity within the family, or if the inverse is true. The results simply indicate that forming a union without papers, or "just living together," is not as important in predicting the division of child care between partners as the societal context in which they organise their family life.

In conclusion, we found weak evidence that living in cohabitation matters for the allocation of time spent on child care between partners. The net effect of the type of union is cancelled out after taking into consideration the contextual level and the diffusion of cohabitation at the societal level. This analysis also shows that individual factors, such as working in the public sector or a couple's characteristics (e.g., if the female partner is highly educated), are much more influential in the couple's organisation of caring activities than marital status.

Table 5: Maximum likelihood estimates for three-level models predicting fathers' share in child care time, 1996-2001

Fixed part		MODEL 1			MODEL 2			MODEL 3			MODEL 4		
		Coef.	sig.	s.e	Coef.	sig.	s.e	Coef.	sig.	Std.	Coef.	sig.	s.e
<i>Individual-level covariates</i>													
Type of partnership	Consensual union	0.808	*	0.49				0.390		0.49	0.328	1.00	
Father's age	Age	0.066		0.15	0.021		0.15	0.022		0.15	0.025	0.15	
	Squared age	-0.002		0.00	-0.001		0.00	-0.001		0.00	-0.001	0.00	
Number of children	1 child	0.00	ref.		0.000	ref.		0.000	ref.		0.000	ref.	
	2 children	-0.506		0.31	-0.577	*	0.31	-0.576	*	0.31	-0.577	*	0.31
	3 or more children	-1.752	***	0.41	-1.856	***	0.41	-1.857	***	0.41	-1.860	***	0.41
Age of youngest child	0 years	0.00	ref.		0.000	ref.		0.000	ref.		0.000	ref.	
	1-3 years	-2.820	***	0.44	-2.855	***	0.44	-2.856	***	0.44	-2.855	***	0.44
	4-8 years	-4.199	***	0.47	-4.305	***	0.47	-4.307	***	0.47	-4.309	***	0.47
	9-12 years	-6.712	***	0.54	-6.937	***	0.54	-6.938	***	0.54	-6.941	***	0.54
Grandparent at home	Yes	-3.508	***	0.72	-3.509	***	0.70	-3.474	***	0.70	-3.484	***	0.70
Father's labour force activity	Private sector	0.00	ref.		0.000	ref.		0.000	ref.		0.000	ref.	
	Public sector	3.286	***	0.35	3.517	***	0.35	3.503	***	0.35	3.504	***	0.35
	Employed/sector unknown	-1.037		0.71	-0.604		0.71	-0.630		0.71	-0.625	0.71	
	Self-employed	-2.686	***	0.34	-2.692	***	0.34	-2.705	***	0.34	-2.705	***	0.34
	Out of work	7.200	***	0.45	5.855	***	0.43	5.880	***	0.43	5.887	***	0.43
Mother's working hours		0.138	***	0.01	0.175	***	0.01	0.175	***	0.01	0.175	***	0.01
Housing tenancy	Owner	0.00	ref.										
	Tenant	0.366		0.33									
	Free-provided	-0.879	*	0.49									
Type of partnership by housing tenancy	Married: owner				0.000	ref.							
	Married: tenant				0.427		0.35						
	Married: free-provided				-0.882	*	0.50						
	Cohabiting: owner				0.656		0.62						
	Cohabiting: tenant				0.393		0.71						
	Cohabiting: free-provided				-0.975		1.95						
Father's educational attainment	Primary Education or less	0.000	ref.										
	Secondary Education	0.857	***	0.31									
	High Education	1.958	***	0.41									
	Missing value	-2.752	*	1.60									
Mother's educational attainment	Primary Education or less	0.000	ref.										
	Secondary Education	1.848	***	0.32									
	High Education	3.695	***	0.42									
	Missing value	1.630		1.59									
Couples' educational homogamy	He has higher education				0.000	ref.		0.000	ref.		0.000	ref.	
	She has higher education				1.490	***	0.41	1.494	***	0.41	1.494	***	0.41
	Both low-educated				-1.377	***	0.38	-1.348	***	0.38	-1.372	***	0.38
	Both secondary-educated				1.099	***	0.39	1.092	***	0.39	1.098	***	0.40
	Both highly-educated				3.463	***	0.46	3.456	***	0.47	3.459	***	0.47
	Other				-1.111		1.20	-1.092		1.20	-1.115		1.20
Women's contribution to family income				0.083	***	0.01	0.083	***	0.01	0.083	***	0.01	

Table 5: (Continued)

		MODEL 1			MODEL 2			MODEL 3			MODEL 4		
Cont. Table 5.		Coef.	sig.	s.e	Coef.	sig.	s.e	Coef.	Std.	Coef.	sig.	s.e	
Country-level covariate													
Country of residence	Denmark							8.389	***	8.39			
	Belgium							0.000	ref.				
	France							-3.653	***	-3.65			
	Ireland							-5.779	***	-5.78			
	Italy							-0.220		-0.22			
	Greece							-8.793	***	-8.79			
	Spain							-4.783	***	-4.78			
	Portugal							-11.037	***	-11.04			
	Austria							-2.201		-2.20			
	Finland							9.455	***	9.45			
Percentage of couples in cohabitation											0.572	***	0.19
Interaction term: country cohabiting couples (%)* living in cohabitation											0.004		0.06
Constant		17.780	***	3.62	18.809	***	3.63	20.689	***	3.09	13.171	***	3.55
Random part (standard deviation)													
<i>Country-level</i>													
Between-countries		6.237		1.40	6.252		1.41			3.462		1.11	
	Denmark							1.197					
	Belgium							0.260					
	France							0.910					
	Ireland							1.037					
	Italy							0.742					
	Greece							0.894					
	Spain							0.792					
	Portugal							0.933					
	Austria							1.086					
	Finland							1.037					
Between waves (years)		12.254		0.14	12.254		0.14	12.282		12.263		0.14	
Interaction										0.214		0.14	
Residual		18.084		0.07	18.052		0.07	18.043		18.051		0.07	
Log likelihood		-202,265			-201,626			-201,605		-201,625			
Number of countries		10			10			10		10			
Number of individuals		13,286			13,325			13,325		13,325			
Number of observations		45,513			45,382			45,382		45,382			
Chi2(2)=		2508.06			2506.26			3038.62		2512.21			
Prob > chi2 =		0.0000			0.0000			0.0000		0.0000			

Legend: * $p < 0.05$. ** $p < 0.01$. *** $p < 0.001$. Ref.: reference category.

Source: ECHP 1996-2001.

7. Conclusions and discussion

Most studies show that mothers are the primary caregivers in the family, although men are slowly shifting towards a “new fatherhood,” characterised by a greater involvement in child care activities. In this context, we have sought to examine the extent to which the spread of consensual unions produces an equalising effect on the gender division of time invested in child care activities in Western societies. Obviously, behind the research question lies a strong assumption: the belief that individuals in consensual unions tend to be more concerned about individual freedom and egalitarian values than married individuals. Indeed, as described in Section 1, it was assumed that individuals in consensual unions tend to adhere to common sociodemographic patterns, such as shorter union durations, higher female employment, lower fertility, higher prevalence of childlessness, educational homogamy, and/or a higher likelihood of renting rather than owning a dwelling. Therefore, we considered plausible that consensual unions could represent a new setting in which mothers and fathers negotiate the share of family responsibilities on more equal terms than within marital unions.

In our research, we studied the share of time fathers, relative to mothers, spent on child care activities in the late 1990s, drawing upon a sample of 10 Western European countries using the ECHP (waves 1996-2001). The main explanatory variable was living in a consensual union, instead of a marital union. After adjusting for the nested-level structure of the data (with observations nested within respondents and respondents nested within countries), and controlling for the main compositional effects, such as household structure, fathers’ employment and education, and partners’ characteristics, we find weak evidence that fathers living in consensual unions account for a slightly higher proportion of the time parents spend on childcare activities than fathers in marital unions. Instead, the diffusion of cohabitation at the societal level appears to matter for fathers’ participation in child care activities.

Results at the individual level indicate that mothers’ employment, educational attainment, working hours, and income contributions are key factors associated with men’s levels of participation in child care. In other words, the “new fatherhood” is strongly associated with the time squeeze of dual-earner couples, as well as women’s improved position in the labour market. There are, however, other *positive* signs of changes among men associated with the expansion of education. Well-educated fathers and highly educated couples seem to be more committed to the sharing of time spent caring for small children. Here, education may reflect the emergence of new values in favour of a more engaged fatherhood, as well as a higher awareness of and motivation for the production of “quality” children among educated fathers.

In addition, contextual factors that may influence the amount of time fathers spend on child care have been studied. Here we have found evidence that family pluralisation,

which is indirectly captured by the diffusion of cohabitation at the societal level, positively contributes to a higher probability that a father will engage in child care. There are still other factors operating in the national context which remain unexplored. National differences in family policies and social norms certainly may determine the time constraints and cultural barriers that fathers encounter in seeking to spend more time with their children. The ECHP data may, however, not be suitable for conducting such a study due to the small sample sizes (i.e., few countries and few cases of partnered individuals with small children). Future research should reexamine these findings based on larger samples or individual case studies.

8. Acknowledgements

The research has been financially supported by the Institut Català de les Dones (2008-2009), and the Spanish Ministry of Education and Science (MEC) (projects SEJ2007-62684/SOCI, CSO2008-00654/SOCI and SEJ2007-67569/SOCI). The authors wish to thank the participants of the Stockholm Workshop, “The Family in the Future - the Future of the Family: The Gender Story,” and Livia Sz. Oláh, in particular, for detailed comments on an earlier draft. We also thank the two anonymous reviewers of Demographic Research for their insightful remarks.

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Appendix: Descriptive statistics of explanatory variables (panel data)

		Mean	Std. dev.	Min.	Max.	Obs.
Fathers' share of time spent on child care	Overall	19.14	24.36	0	100	46,415
	Between		20.74	0	100	13,497
Men's age	Overall	38.33	6.93	17	74	46,415
	Between		7.22	18	73	13,497
Number of children	Overall	2.09	1.00	1	12	46,415
	Between		0.99	1	12	13,497
Women's working hours	Overall	19.13	19.30	0	96	45,717
	Between		17.81	0	96	13,419
Age of youngest child	Overall	5.27	3.56	0	12	46,415
	Between		3.67	0	12	13,497
Women's contribution to family income	Overall	27.32	24.04	0	100	45,926
	Between		22.27	0	100	13,368

		Overall		Between		Within
		Freq.	%	Freq.	%	%
Type of partnership	Married	42,558	91.69	12,276	90.95	98.54
	Cohabiting	3,857	8.31	1,618	11.99	86.51
Male activity	Employed private sector	21,517	46.36	7,446	55.17	84.59
	Employed public sector	9,427	20.31	3,182	23.58	84.11
	Employed unknown sector	1,000	2.15	706	5.23	41.17
	Self-employed	10,286	22.16	3,342	24.76	85.33
	Out of work	4,119	8.87	2,171	16.09	62.54
	Missing	66	0.14	64	0.47	34.24
Number of children	1 child	13031	28.07	5447	40.36	82.12
	2 children	21448	46.21	6915	51.23	83.95
	3 or more children	11936	25.72	3610	26.75	89.17
Age of youngest child	0 years	2,419	5.21	2,233	16.54	31.12
	1-3 years	15,647	33.71	7,129	52.82	68.89
	4-8 years	17,716	38.17	7,290	54.01	58.75
Grandparent at home	9-12 years	10,633	22.91	5,013	37.14	71.97
	No	44651	96.20	12982	96.18	99.61
	Yes	1764	3.8	628	4.65	90.01
Housing tenancy	Owner	34,091	73.45	10,368	76.82	93.21
	Tenant	9,279	19.99	3,538	26.21	83.55
	Free-provided	3,038	6.55	1,315	9.74	66.46
	Missing	7	0.02	7	0.05	51.19
Educational attainment of male partner	Less than secondary edu.	19,341	42.12	6,391	47.89	88.57
	Secondary level	16,317	35.53	5,711	42.79	82.22
	Third level	10,021	21.82	3,282	24.59	88.42
	Missing	240	0.52	131	0.98	67.26
	Total (N)	45,919	100.00	15,515	116.25	86.02
Educational attainment of female partner	Less than secondary edu.	18,542	40.08	6,081	45.17	88.87
	Secondary level	16,852	36.42	5,797	43.06	83.25
	Third level	10,628	22.97	3,597	26.72	87.44
	Missing	244	0.53	131	0.97	65.81
	Total (N)	46,266	100.00	15,606	115.93	86.26
Couples' educational homogeneity	He has higher education	8,437	18.18	3,368	24.95	74.38
	She has higher education	9,051	19.50	3,477	25.76	76.95
	Both low-educated	13,344	28.75	4,523	33.51	85.34
	Both secondary-educated	9,122	19.65	3,345	24.78	76.53
	Both highly-educated	6,036	13.00	2,036	15.08	85.78
	Other	425	0.92	229	1.70	65.44
	Total	46,415	100.00	16,978	125.79	79.50

Source: ECHP 1996-2001 (unweighted data).

Note: Sample consisting of couples with at least one child under 13.

