Gender Equality and Outsourcing of Domestic Work, Childbearing, and Relationship Stability among British Couples

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Abstract

This study investigates whether gender inequality in the division of housework and childcare may be an obstacle to childbearing and relationship stability among different groups of British couples. Furthermore, it explores whether outsourcing of domestic labour ameliorates any negative effects of domestic work inequality. The empirical investigation uses event-history analysis based on fourteen waves (1992-2005) of the British Household Panel Study. We find that the association between domestic work arrangements and family outcomes vary by the presence of children, women's employment and gender role attitudes. Gender inequality in domestic work reduces relationship stability among egalitarian childless women and among all mothers. For first and second births as outcomes, the association is weaker and depends on the level of inequality and women's employment status, respectively. Domestic outsourcing is not significant for these family outcomes with the exception of formal childcare which is positively associated with the risk of a second birth.

Keywords: childcare; childbearing; fathering; fertility; housework; life course; relationship breakdown

Introduction

Employed women who are also responsible for most of the domestic work can respond to their dual burden in a number of ways. Gershuny, Bittman and Brice (2005) have argued that they can (a) tolerate it, (b) leave the labour market, (c) renegotiate the domestic division of labour, or (d) leave their husbands. In addition, two other responses come to mind. Women may try to (e) outsource domestic work, either to other family members or by paying someone to do it. In addition, since most women's domestic work burden increases significantly with each child they have (Sanchez & Thomson, 1997; Schober, forthcoming 2011), they may (f) reduce the number of children they have. Women may also choose a combination of various options simultaneously or vary them over the course of their relationships and/or employment careers.

In light of the UK context of high family instability and significant differences in fertility between women with low and high education, this study will examine whether an unequal division of domestic labour is associated with a lower probability of having children or with a greater separation risk for couples. We will also explore whether paid or unpaid help with housework or childcare may be acceptable substitutes for the domestic work contributions of husbands to increase childbearing or relationship stability. The empirical investigation uses event-history analysis based on fourteen waves (1992-2005) of the British Household Panel Study. The results show significant variations in the association of men's domestic contributions with childbearing or relationship stability, whereas domestic outsourcing seems to be largely insignificant for these family outcomes.

The following section discusses how this study extends the literature on this topic. Section 3 describes the theoretical framework and the hypothesis for the empirical analysis. Details on the measures in the British Household Panel Survey and methods used for the empirical analysis are given in Section 4 and 5. Section 6 presents the results. This is followed by a more detailed interpretation and conclusions in the light of previous research.

Literature review and contribution to existing research

Existing evidence on fertility trends reports significant associations with changing gender relations, in particular, women's employment and issues of combining employment with family work. In the late 1990s, the discussion around the very low fertility levels in Continental Europe centred on increasing female labour market participation and the lack of sufficient institutional support for mothers who want to combine employment and childcare as possible explanations (e.g. Brewster & Rindfuss, 2000; McDonald, 1997). Some scholars have since brought considerations of men's domestic work back into the picture (Bernhardt & Goldscheider, 2008; Cooke, 2004, 2008; Olah, 2003; Torr & Short, 2004). They find that men's contributions to either housework or childcare are positively associated with the probability of a second birth among couples in Germany, Italy, Hungary and Sweden (Cooke, 2004, 2008; Olah, 2003). There is no evidence of such an effect in Spain (Cooke, 2008). In the US, Torr and Short (2004) find a curvilinear effect with very traditional couples and those with a relatively equal division of housework being more likely to have a second child than the middle group. In Sweden, consistency between the division of domestic labour and couples' gender role attitudes, in a traditional or egalitarian way, predict a higher likelihood of a second birth compared to couples where practice does not match their ideals (Bernhardt & Goldscheider, 2008).

With the exception of Cook (2008), these previous studies, however, have not considered whether help with unpaid work from other people than the male partner may also affect fertility outcomes. This analysis will extend the literature by including measures of outsourcing of housework and childcare. So far, there is also no evidence specifically for the UK, which has had higher fertility rates than the low fertility countries in Continental Europe but lower female labour market participation rates than Sweden or the US. Fertility levels have generally not been considered alarmingly low. However, higher rates of childlessness and the lower completed family Domestic Work, Childbearing, and Relationship Stability among British Couples size of women with high levels of education or those in managerial occupations (Ekert-Jaffé, Joshi, Lynch, Mougin, & Rendall, 2002; Rendall, Ekert-Jaffé, Joshi, Lynch, & Mougin, 2009; Rendall & Smallwood, 2003; Sigle-Rushton, 2008) raise some questions regarding the extent to which this is voluntary or the result of difficulties in combining employment and childcare. This research contributes to the question whether variations in childbearing behaviour may be due to women's responsibilities for domestic work which conflict with their paid work commitments or their egalitarian attitudes.

Various American studies provide evidence of a significant negative association between women's housework and perceived relationship quality, especially when mediating factors like women's employment or gender role attitudes are taken into account (e.g. Frisco & Williams, 2003; Wilkie, Ferree, & Ratcliff, 1998). A more egalitarian division of childcare is positively associated with relationship satisfaction and stability of couples in the Netherlands (Kalmijn, 1999) but not significant in Germany (Cooke, 2004). Instead, Cooke (2004) finds a positive association between husbands' relative housework contributions and divorce among childless couples in Germany. Since she cannot account for differences in women's gender role attitudes, this result, however, may well be due to unobserved factors, such as traditional family values, which increase both women's housework time and their propensity to stay in a relationship (Haynes, Baxter, Hewitt, & Western, 2009). Results among couples with young children are generally quite mixed (Belsky, Lang, & Huston, 1986; MacDermid, Huston, & McHale, 1990; Ruble, Fleming, Hackel, & Stangor, 1988). These contradictory results suggest that the effect of gender inequality in domestic work on relationship stability may depend on the life course stage, in particular the presence and ages of children, and other mediating factors such as women's labour market participation and gender role attitudes.

Britain has had one of the highest divorce rates in Europe over the past decades. While family background and socio-economic disadvantages have been found to be strong predictors of dissolution risk (Pryor & Trinder, 2004), changes in gender roles have received less attention in British divorce studies. The two existing studies provide mixed evidence. Chan and Halpin (2002) find no significant association of couples' division of housework with couples' divorce risk. However, they only look at the risk of dissolution among first marriages and do not consider what difference the presence of children and the division of childcare may make. Sigle-Rushton (2010) finds a lower risk of relationship breakdown among couples where men contribute to childcare. As cohabitation is increasingly practiced and seen as a substitute for marriage even among British couples with children and given the still higher rates of breakdown of cohabitations (Steele, Kallis, Goldstein, & Joshi, 2005), it seems crucial to include cohabiting unions. Furthermore, we will investigate the importance of housework and childcare division as well as domestic outsourcing separately for childless couples and those with dependent children. So far, there is also a lack of evidence of whether outsourcing of domestic work may also reduce the pressure on the relationship. As a relatively liberal welfare state with considerable wage differences between women with high and low education and no particular incentives to promote men's involvement in domestic labour, the UK provides a context in which outsourcing may be crucial in relieving couples' and, in particular, women's workload.

Reviewing the theoretical and empirical evidence

Economists and sociologists have long concentrated on the consequences of the expansion of female employment on childbearing or divorce risk. Neo-classical economic models (Becker, 1991) predict that a specialised division of labour will increase childbearing by lowering women's opportunity costs in the form of forgone earnings. They also predict a lower risk of divorce, since the gains from staying in a relationship are larger when one partner specialises in domestic work than in a more symmetrically structured division of labour. For relationship instability, sociologists have proposed two counter arguments. Oppenheimer (1997) has argued that women's employment Domestic Work, Childbearing, and Relationship Stability among British Couples nowadays is attractive as a family strategy to reduce risks of unemployment and financial pressures, thereby lowering the risk of relationship dissolution. Theoretically, more symmetrical roles have also been suggested to provide more shared experience and empathy among partners (Scanzoni, 1978; Simpson & England, 1981) and more democratic relationships (Giddens, 1992).

The British evidence on childbearing is largely in line with the economic argument. Women with higher levels of education, which are also typically associated with higher wages and better career opportunities, have a lower probability of having a first child and a lower completed family size (Ekert-Jaffé et al., 2002; Kneale & Joshi, 2008; Rendall & Smallwood, 2003). The empirical evidence on relationship stability is more mixed. While Chan and Halpin (2002) find a significant positive association between women's relative earnings or hours in employment and divorce risk in the UK, some US results suggest employed women have more stable marriages (Schoen, Rogers, & Amato, 2006). In general, many studies find the effect of women's employment or earnings on relationship stability to depend on other factors such as their partners' income (Kalmijn, Loeve, & Manting, 2007; Ono, 1998; Rogers, 2004) or women's gender role attitudes (Kalmijn, Graaf, & Poortman, 2004; Sayer & Bianchi, 2000). Therefore, a growing body of research has argued that the relationship between women's domestic work and childbearing or relationship quality will depend on their expectations (Bernhardt & Goldscheider, 2008; Deutsch, 1985; Pina & Bengtson, 1993; Walster, Walster, & Berheide, 1978; Wilkie et al., 1998). These expectations will be shaped by the amount of time women spend on paid work as well as by the combination of paid and unpaid work that is consonant with their gender role identities or attitudes.

We assume that men's contributions to housework and childcare will matter for childbearing decisions and relationship stability mainly when women participate in the labour market. These couples are also more likely to need help with housework or childcare from someone outside the household. During labour market interruptions when the male partner is the sole breadwinner,

Domestic Work, Childbearing, and Relationship Stability among British Couples women are more likely to accept the full responsibility for the domestic sphere. The combination of paid work with housework and childcare responsibilities are likely to increase the workload and frustration for women, especially when they have children. To reduce this, greater domestic contributions from their partners or external help with household labour may become a precondition to childbearing decisions. We would also expect more equally shared domestic work or external domestic help to reduce conflict between partners and promote relationship quality. Unfortunately the available data does not allow us to investigate different underlying processes of the associations between domestic work arrangements and these family outcomes, i.e. by distinguishing feelings of unfairness from overload.

Cooke (2008) finds that live-in relatives or servants and the use of formal childcare increase the probability of a second birth among dual-earner couples in Italy. However, given the lack of other research, it is unclear whether paid or unpaid help from outside the household will have a stronger effect. Unpaid help may be perceived as a larger contribution by relieving the household of additional costs. However, since this is usually done by relatives, in particular grandmothers, other sources of conflict in these family relationships may partly offset the financial advantage.

Theoretical approaches focussing on identity and gender (Stets & Burke, 2000; West & Zimmerman, 1987) suggest that men's and women's identities regarding their roles as male/female partner in a relationship and as mothers or fathers constitute the evaluation standards for their division of labour. Discrepancies between these standards and the actual division of childcare and housework are expected to result in increased levels of stress, frustration or anxiety. Postponed childbearing or dissolution of the relationship are two strategies to reduce this. We therefore assume that women's share of domestic work is more negatively associated with the likelihood of a first or second birth or the risk of separation for women with egalitarian identities compared to those with more traditional division of labour standards. While measures of identities would be ideal for this

Domestic Work, Childbearing, and Relationship Stability among British Couples study, questions about attitudes unfortunately provide the only available large-scale evidence on differences in the values people attach to different combinations of employment and family care.

The association between domestic work arrangements and childbearing or partnership stability is also expected to vary by life course stage, in particular by the presence of dependent children in the household. In line with previous empirical results from other countries (Bernhardt & Goldscheider, 2008; Henz, 2008), we expect gender inequality in the division of domestic work and outsourcing to have a weaker effect on couples' decisions to have a first child than for the second one. The amount of housework is usually still limited before parenthood and therefore women may still feel able to cope with doing most of it and may not fully anticipate the increase in domestic work which the arrival of the first child entails.

By contrast, given that the presence of children still has a stabilising effect on partnerships in the UK (Steele et al., 2005), dissatisfaction with the division of housework is less likely to lead to separation among parent couples than it is among childless couples, where partners are not bound together by responsibilities for a common child. The division of childcare, however, is expected to have a strong effect on relationship stability, since it results not only from partners' (dis)satisfaction with the division of labour. If the mother and the father share the responsibility for childcare and both spend significant amounts of time with the child, this may strengthen relationship stability due to the bonds established between both parents and the child (England & Kilbourne, 1990). Unfortunately, the available childcare measure does not allow testing different hypotheses regarding childcare effects of time alone with the child or more shared family time and empathy with the partner.

The analysis will explore separately the associations between domestic work arrangements and decisions to have children or end a relationship. Even though childbearing and relationship decisions are often interdependent processes (e.g. see Steele et al., 2005) and we assume that the

Domestic Work, Childbearing, and Relationship Stability among British Couples gender division of domestic work and the extent of domestic help will impact on both, they are rarely seen as alternatives by actors at one point in time. The nature of their interdependence and the effects of domestic work inequality and outsourcing may vary between outcomes and may differ by life course stage and mediating factors. As we are particularly interested in exploring these variations, we test the hypotheses separately for childbearing and relationship dissolution and for childless couples and parents, respectively.

H 1: Gender inequality in the domestic work division is negatively associated with couples' likelihood of having a first or second child for women who also do paid work or who hold relatively egalitarian attitudes.

H 2: Paid or unpaid help with housework or childcare are positively associated with couples' probability of having a first or second child when women participate in the labour market.H 3: The gender division of domestic work and outsourcing are more strongly associated with the

decision to have a second child than for the first child.

H 4: Gender inequality in the domestic work division is positively associated with the risk of family breakdown for women who work in the labour market or who hold relatively egalitarian attitudes.H 5: Paid or unpaid help with housework or childcare is negatively associated with the risk of relationship dissolution for women in paid work.

H 6: The gender division of housework and outsourcing are more strongly associated with the risk of relationship breakdown among childless couples than among couples with dependent children.

Socio-economic and demographic influences on childbearing and separation risk

Neo-classical economic models and several empirical studies suggest a negative effect of women's earnings or education on childbearing (Rendall & Smallwood, 2003). Results for relationship stability are mixed. Some studies find a larger risk of relationship breakdown among women with higher education (Chan & Halpin, 2002), while others suggest that the association

Domestic Work, Childbearing, and Relationship Stability among British Couples between couples' educational level and divorce has become negative in recent years (Harkonen & Dronkers, 2006). By reducing financial worries, couples' higher income seems to have a compensating positive effect on childbearing and relationship stability (Ekert-Jaffé et al., 2002; Kreyenfeld, 2002). The empirical analysis therefore controls for both partners' educational levels and couples' total earnings to reduce the risk that the division of domestic work and family outcomes are jointly determined by couples' socio-economic characteristics.

Married couples are more likely to have children and less likely to separate than those in cohabiting unions (e.g. Berrington & Diamond, 1999; Steele et al., 2005). Previous studies also suggest that expectations towards the gender division of labour might be more egalitarian in cohabiting unions than in marriages (Cunningham, 2005; Cunningham, Beutel, Barber, & Thornton, 2005; Kalmijn et al., 2007). However, Haynes et al. (2009) found no differences by marital status in the association between domestic work and relationship breakdown. We would also assume this difference to be captured in part by women's gender role attitudes and employment status as mediating factors. However, we conduct some additional examinations whether the associations of the division of domestic work and outsourcing vary by marital status.

Evidence from other countries suggests that the probability of having a second child is greater if the woman already has a child with a previous partner (e.g. Henz & Thomson, 2005). For relationship stability, theoretical work on women's perceptions of fairness proposed the importance of women's sense of feeling appreciated and understood by their partners (Major, 1987; Thompson, 1991). This may be captured by the similarity in partners' gender role identities (Sanchez, Manning, & Smock, 1998). A greater separation risk has been found for couples where women are substantially more educated or older or earn more than their partners (e.g. Kalmijn et al., 2007; Steele, Sigle-Rushton, & Kravdal, 2009). A greater risk to dissolve has also been found for couples where one partner has previously been married and experienced a separation or divorce (Steele et al., 2009).

Data and methods of analysis

This study uses twelve waves of the British Household Panel Survey (BHPS) from 1992 to 2005. The BHPS is based on probability sample of households from Great Britain in the year 1991. All members of the household are interviewed annually, and new partners of sample members or additional household members are added to the sample. In addition to relationship and fertility histories, the BHPS has asked questions on housework since 1992, one question about the division of childcare responsibility since 1994 and includes biannually repeated questions on attitudes about gender.

We apply event-history analysis to model whether couples who have their first or second child or experience relationship breakdown between 1992 and 2005 differ from those who do not in their division of housework and childcare and extent of domestic help they have in the previous year. We model separately couples' childbearing and relationship dissolution for childless couples and couples with children, respectively. This facilitates testing whether the associations with couples' domestic work arrangements differ in terms of mediating factors and depending on the stage of the life course stage, which is the main aim of this study. Allowing for differences in the starting samples in the analysis of childbearing and relationship stability also increases the otherwise relatively small number of separation events. Second births are analysed separately from the transition to parenthood to allow including couples whose first birth took place before they joined the panel. Excluding them would result in less than half the sample size and greater risk of selection bias by focussing on couples who continuously respond to the panel. By modelling the transitions separately, however, our comparison of effects between groups can only be exploratory and we cannot account for unobserved factors which may be correlated with the time people spend on domestic work and their family transitions.

To restrict the sample to the usual childbearing age and avoid a heavy influence of teenagers having children which is likely to be linked to a different set of social factors, i.e. socio-economic circumstances and contraception use, we confine the sample for the childbearing analysis to include only married or cohabiting couples where the female partner is between 20 and 40 years old. For the analysis of separation risk, we include all women aged between 20 and 55 who live in cohabiting unions, since we want to focus on women who may also participate in the labour market. The sample of parents includes only couples where the youngest child is aged twelve or younger and lives in the same household, as information on childcare is only available for these families.

The dependent variables are represented by a dichotomous measure that indicates whether or not the couple had a first/second birth or separated at each year following the couples' wave of entry, respectively. In the event of death of one partner, the couple is coded as censored. Ideally, one would want to follow all couples from the start of the relationship and the time of the first birth, i.e. the onset of risk of separation or a first or second birth, respectively. However, for many couples the start of the relationship or the first birth occur either before the initial wave of the BHPS in 1991 or before 1992 and 1994, when the BHPS asked the questions on housework and childcare divisions for the first time. Consequently, the onset of risk is set to the year couples enter into the panel or to 1992 for childless couples and to 1994 for couples with one or more children that entered earlier. For first births and separations, the duration of the relationship is controlled for. The age of the first child or the youngest child is included in the estimation of second births and parents' separation risk, respectively. The samples of parent couples include couples where the mother had a child in a previous relationship to avoid selection bias by focussing only on two parent families with biological children. The year when couples are first observed varies in this unbalanced panel, as original sample members may find new partners after entering the panel.

Event-history analysis of yearly fertility and relationship data are used, since the central explanatory variables to this study - the division of housework and childcare - can only be observed once a year. As the duration dependency of the baseline hazard for each subgroup is unknown and not the focus of this paper, we use a Cox proportional hazard model adjusting for tied survival data by the Breslow method. The proportional hazard assumption is tested for each model. Robust standard errors are calculated to account for the serial dependency of several observations of the same couple over time.

To reduce endogeneity issues, we use first order lags of all explanatory and control variables i.e. they are measured at time t-1 for childbearing or separation outcomes at time t. To reduce the risk of adaptations in anticipation of parenthood, lags of t-2 are used for couples whose interview took place nine months or less before a birth event. All measures are time-varying except for information about previous relationships. Although lagged explanatory variables allow us to examine the temporal order of events, there remains the possibility of reverse causation, e.g. poor relationship quality may reduce men's housework contribution or couples may adapt their division of labour or gender role attitudes already while planning a pregnancy.

Since a balanced sample would reduce the sample sizes to very small event numbers, this analysis is based on an unbalanced panel of the original BHPS starting sample and respondents who joined their households over the observation period. As longitudinal weights to adjust for attrition and non-response are not available for an unbalanced panel, we conducted separate analyses of predictors of non-response. These show that 15 percent of childless couples leave the panel before the end of the survey and before having a child or separating, while the attrition rate is with approximately 8 percent smaller among parent couples. This is in line with previous BHPS attrition studies (Uhrig, 2008). Significant predictors of non-response among childless couples are being unmarried and younger ages for women and men. Among couples with children, younger couples,

Domestic Work, Childbearing, and Relationship Stability among British Couples those with older children, and those living in Scotland are most likely to leave the panel. Nonresponse is also more frequent during more recent years of the survey. On the whole, we therefore find only a few significant differences between stayers and leavers of the BHPS sample. We control for all these demographic, regional and time predictors in each model.

Between 1992 and 2005, 1519 childless couples are observed for more than one year. 607 of these become parents between 1992 and 2005. However, only 1030 (68 per cent) childless couples have no item non-response in any of the independent variables. Between 1994 and 2005, we observe 1517 parent couples with one child, for whom the age of the child can be calculated. Of these, 637 couples have a second child during the observation period. 44 per cent of the couples with one child have non-response in some of the items needed for the analysis leaving 847 couples with no missing data. In the analysis of separation risk, we observe 3167 childless couples and 2553 couples with at least one child under thirteen years. Of these, 127 (8 per cent) and 344 couples (13.5 per cent) separate or divorce during the observation period, respectively.

Overall the percentage of observations lost due to item non-response is larger than the effects of wave non-response or attrition. Since item non-response may not be completely random, we test for potential bias by imputing some of the missing values through chained equations. This approach is appropriate especially when missingness depends on measurable characteristics. In practice, this is difficult to establish but we find that having a disability or being in poor physical health is positively correlated with item non-response. Even if there are other unobserved predictors, simulation studies have suggested that multiple imputation still is a suitable strategy (Schafer, 1997). The imputed models are based on five imputed data sets. We impute all the variables except the non-normally distributed continuous variables of women's hours of paid work and their relative housework time, which may cause problems with this imputation approach. After imputation the final sample for the analysis of first and second births includes 1205 childless

Domestic Work, Childbearing, and Relationship Stability among British Couples couples and 1130 couples with one child. The final samples for the analysis of relationship stability include 2777 childless couples and 2304 couples with children aged up to twelve years. The statistical results after imputing the missing items are presented, since they either do not vary or are only slightly less significant than those before.

Measuring the explanatory variables

The division of housework within couples is operationalised as the percentage of time women spend on housework relative to the total weekly housework time of both partners. Since gender inequality may be perceived as more unfair at higher levels, we also test for a curvilinear relationship between women's housework share and childbearing and relationship outcomes. Women's housework share is with over 70 per cent significantly higher among parent couples than among childless couples where women spend just over 60 per cent of housework time (see Table 1 and 2). For childcare, we only differentiate between the cases when 'the mother is mainly responsible for looking after the child(ren)' or when 'the father shares or takes more responsibility for childcare', since the 2 per cent of couples stating that the father is more responsible are too small to form a separate category.

Outsourcing of housework is captured by a dummy variable whether someone other than the man or the woman mostly does one of four tasks: cleaning, cooking, laundry or grocery shopping. Less than 5 per cent of all families regularly outsource some of their housework. For outsourcing of childcare, we differentiate between the use of i) informal childcare arrangements provided by relatives, neighbours or friends, ii) formal childcare in the form of nannies, nurseries, childminders, or after-school clubs, and iii) all other arrangements where either the father or the mother is taking care of the children. These other arrangements include when mothers do not work for pay or work only from home or during school hours. Parental care is by far the most frequent care arrangement, followed by informal care. Only about 10 percent of children attend formal daycare institutions.

We control for women's usual weekly paid work hours and examine interactions between domestic labour and women's employment status. Women who were on maternity leave in the previous year are recorded as not in paid work. Gender role attitudes are measured based on the strength of respondents' (dis)agreement with six statements: i) 'A pre school child is likely to suffer if his or her mother works', ii) 'All in all, family life suffers when the woman has a full time job', iii) 'A woman and her family would all be happier if she goes out to work', iv) 'Both the husband and wife should contribute to the household income', v) 'Having a fulltime job is the best way for a woman to be an independent person', vi) 'A husband's jobs is to earn money; a wife's job is to look after the home and family'. Based on these questions, we calculate two common underlying attitude factors for women and men, respectively. A Cronbach's alpha of about 0.8 for both composite indices provide strong evidence that these six questions represent a common underlying factor. The factors are rescaled to the original Likert scale of values between 1 and 5 with larger values representing more egalitarian attitudes. To include interactions between women's childcare responsibility and their relatively egalitarian or very traditional attitudes about gender, we create dummy variables for women in the top and bottom quartile of the attitude distribution, respectively.

For women and men, we differentiate between three levels of educational attainment: 'GCSE or less', 'A-levels or similar qualification' or 'university degree'. Since a higher dissolution risk has been found among couples where women are more educated than their partners while the risk is likely to be lower among couples where both partners have high educational attainment, we construct dummy variables representing whether both couples have the same level of low, medium or high education or whether the woman or the man is more educated for the separation risk analysis. In the analysis of partnership stability, we also include women's contribution to the household income measured as their gross monthly earnings relative to the sum of both partners' earnings. To allow for non-linear specifications, we distinguish between women who earn less than 40 per cent, between 40 and 60 and above 60 per cent of household income. We interact women's

Domestic Work, Childbearing, and Relationship Stability among British Couples relative earnings with marital status to allow for a different effect in marital and cohabiting unions. To control for couples' financial situations, we include fathers' work hours and the log of couples' gross monthly earnings adjusted for inflation using the retail price index with 1992 as the base year.

Demographic controls include both partners' ages, the length of couples' relationships, and marital status. For parent couples, the youngest child's age is controlled for. We also account for the survey year to reduce the risk of spurious association due to trends over time in the dependent and independent variables. For the analysis of separation risk, we include additional controls such as the difference between women's and men's gender role attitudes, whether one partner has previously been married and experienced a separation or divorce. We also tested variables for whether one of the partners had children during previous relationships, whether they had a pre-marital birth and the mother's age at first birth but they were not significant and are therefore not included in the final models.

[Table 1 about here]

[Table 2 about here]

Results

Modelling strategy

This section presents the statistical results of the event-history analysis of couples' likelihood to i) have a first child, ii) have a second child, iii) separate while childless, iv) separate while the youngest child is twelve years or younger. For each part of the analysis, we adopt the following modelling strategy. Based on a model including just controls, the first modelling step adds measures of couples' division and outsourcing of housework and for parent couples also childcare. In a second step, we tested for a curvilinear effect of the division of housework. In a third step, we include interactions between the division of domestic work and women's gender role attitudes. Fourthly, we test an interaction with mothers' employment status by restricting the sample to mothers in paid work because this facilitates comparing the results to previous studies. Finally,

Domestic Work, Childbearing, and Relationship Stability among British Couples we rerun these models for subsamples for married and cohabiting couples, respectively, to examine whether the effects of housework and childcare arrangements vary by marital status. In the following tables, only the first model plus any other significant modelling steps are shown for each part of the analysis.

Findings for first births

As shown in Model 1 in Table 3, neither women's housework share nor having housework help is significantly associated with the likelihood of having a first child. Women's longer paid work hours, however, significantly reduce their probability of becoming mothers. When a squared term of women's housework share is added in Model 2, the main effect and the square term are significant at the 10 percent level. This suggests that the effect seems to be curvilinear and the turning point is calculated at 63 percent of the total housework time. This means that a higher housework share for women is positively associated with their likelihood of a first birth until they do about 63 percent. Above that, a higher housework share has a decreasing marginal effect on the probability of motherhood. For instance, for women with a housework share of 83 percent (the sample mean plus one standard deviation), the probability of having a first child is 7 percent lower than for women with an average housework share of 63 percent. Interactions between women's housework share and their attitudes about gender or their employment status were not found significant (not shown). Hypothesis 1 is rejected except for very high levels of housework share is overall still positively associated with the risk of parenthood, even if at a decreasing rate.

Having help with housework is not significant, and this is the same if we restrict the sample to (self)employed women (model not shown). Hypothesis 2 regarding the positive effect of outsourcing of housework therefore has to be rejected. Other covariates such as low levels of education for women, being married, and shorter relationship durations show the expected positive

Domestic Work, Childbearing, and Relationship Stability among British Couples association with the probability of a first birth. Additional tests show no significant differences between subsamples of married and cohabiting couples (not shown).

Findings for second births

Model 3 shows that women's larger shares of housework or childcare responsibility are not significantly correlated with the likelihood of a second birth. Interactions between couples' division of housework or childcare and women's gender role attitudes, however, do not reach significance (model not shown). Instead it seems mothers' employment is more important for their expectations regarding the division of unpaid work. When we restrict the sample to mothers in paid work in Model 4, women's housework share becomes marginally significant at the 10 percent level. The combination of inequality in housework and paid work therefore may reduce the likelihood of a second birth. Women with a housework share of 94 percent (mean plus one standard deviation) are 10 percent less likely to have a second child than women who do 73 percent of the housework (sample mean). While this provides some support for Hypothesis 1, which assumed that the association between domestic work inequality and second birth probability may depend on women's employment, the result should be treated with caution given the marginal significance. Furthermore, Hypothesis 1 has to be rejected for the division of childcare and for gender role attitudes as mediating factor.

In Model 3, parents who use formal childcare are 34 percent (e^{0.298}-1) more likely to have a second child than those where the mother is not working or where the father looks after the child while the mother works. As we would expect, this is stronger among working mothers (43 percent) in Model 4. However, this only partly confirms Hypothesis 2 regarding a positive effect of outsourcing, since surprisingly there is no significant difference between outsourcing to relatives or friends and parental care arrangements and no significant association is found for help with housework.

Hypothesis 3 assumed that gender inequality in domestic work and lack of external help would have a stronger negative effect on couples' probability of having a second than a first child. There is some support for this, since for the some childless women a larger housework share even increases the probability of a first birth and outsourcing is not significant. However, the association of domestic work inequality and second births is also only marginally significant and there is no consistent positive effect of outsourcing on second births. Of the other covariates, mothers with high levels of education are more likely to have a second child quickly than those with low education, probably representing a catch-up effect also found in other studies. The age of the first child and its square, parents' ages, and marital status also show significant relationships with the second birth risk. Housework and childcare variables show the same patterns among married and cohabiting couples, but are less significant than in the total sample.

[Table 3 about here]

Findings for childless partnership breakdown

Model 5 in Table 4 presents the results for the likelihood of dissolution among childless couples. Without interactions neither women's housework share nor having help with housework is significantly associated with separation risk. Model 6 adds an interaction between women's housework share and their attitudes about gender and we see that the main effect for housework and the interaction term are significant. In line with Hypothesis 4, a larger housework share therefore seems to increase the risk of partnership breakdown for egalitarian childless women. An increase by one standard deviation in women's housework share (from the mean of 63 to 84 percent) would result in a 21 percent rise in separation risk for women with average gender role egalitarianism. Additional explorations of interactions with women's employment status revealed no significant results (not shown). Hypothesis 5 regarding a positive effect of having help with housework on partnership stability is rejected for childless couples.

In line with previous studies, couples with two highly educated partners show a lower separation risk while those with different education levels seem to be more likely to separate than homogenous medium educated couples. Relatively equal earnings stabilise childless cohabiting relationships, while relationships of married couples appear to be most stable when women earn less than 40 per cent of household income. Younger and unmarried couples and those with a previous marital breakdown of either partner also face a greater likelihood of union dissolution. The associations for the gender division of housework and outsourcing do not differ by marital status (models not shown).

Findings for parental partnership breakdown

Model 7 gives the results for separation risk among parents with children aged twelve years or under. In line with Hypothesis 4, mothers' main childcare responsibility is positively associated with the risk of relationship breakdown compared to couples where partners are equally responsible for childcare, increasing the separation risk by 46 percent. Women's housework share, however, is not significant. Mothers' egalitarian attitudes about gender increase the risk of separation but interactions with inequality in the division of housework or childcare did not prove significant (models not shown). Model 8 restricts the sample to working mothers to investigate whether the effect of housework and childcare inequality and outsourcing is stronger among them. Indeed, the division of childcare increases in significance, suggesting a 92 percent lower separation risk for couples where both parents are jointly responsible for looking after the children. However, mothers' housework share is still not significantly associated with relationship stability. Hypothesis 4 is therefore rejected for the division of housework but not for childcare among couples with dependent children. In contrast to Hypothesis 5, there is no sign of help with housework or childcare strengthening relationship stability.

Hypothesis 6 assumed that housework inequality and lack of help would have a stronger negative effect on the likelihood to separate of childless couples than among parents who are bound together by the common responsibility for children. This was confirmed for the division of housework but has to be rejected for outsourcing. Similar to childless couples, younger and unmarried women and couples where either partner previously experienced marital breakdown are more likely to separate. In addition, the number of children and the age of the youngest child increase the risk of breakdown. The association of domestic work arrangements and relationship stability does not differ significantly between subsamples of married and cohabiting parent couples (models not shown).

[Table 4 about here]

Discussion

This research finds significant associations between the division of domestic work and couples' childbearing decisions and partnership stability; the relationship, however, differs by the presence of children, women's employment status and attitudes about gender. The division of housework is marginally significant in predicting couples' childbearing even after women's employment and socio-economic factors are controlled for. A division of housework where the male partner does a larger or equal amount of housework seems to lower the likelihood of a first birth compared to couples with moderate levels of inequality. This is in line with findings for Germany (Henz, 2008), where a more traditional division of housework is positively associated with couples' probability of becoming parents. However, when women's housework share exceeds the average of 63 percent, the association reverses and greater inequality is negatively related to couples' likelihood of becoming parents.

The finding that more equal sharing of domestic work is positively associated with the probability of a second birth among working mothers matches results for other countries (Cooke, 2004, 2008; Olah, 2003; Torr & Short, 2004). In contrast with Torr and Short's US study (2004),

Domestic Work, Childbearing, and Relationship Stability among British Couples even if we replicate their cut-off points, we do not find the same curvilinear effect with the most traditional group also having a second child more quickly. This may suggest that there is less variation in how much working mothers expect their partners to help around the house in Britain compared to the US. Cooke (2004) finds a stronger effect for childcare than for housework among German couples. One explanation for the lack of significance in the UK may be that the binary variable of childcare responsibility in the BHPS does not capture enough of the variation in couples' childcare division. While Bernhardt and Goldscheider (2008) find that inconsistence between gender role attitudes and domestic work practice reduce the likelihood of a second birth in Sweden, this is not the case in Britain. We tested whether one reason for the difference may be that they use interactions with pre-parental attitudes. We replicated this for a sub-sample of BHPS couples which we can observe before having their first child but the results were not significant. A more likely reason therefore may be that social norms about gender are more egalitarian in Sweden (Wall, 2007), which makes women's attitudes socially more acceptable to use as a criterion for childbearing decisions.

As for relationship stability among childless couples, we find support for the argument that inconsistency between women' egalitarian attitudes and a traditional division of housework is associated with a heightened risk of partnership breakdown. Among parents of pre-school and school-aged children, however, we find mothers' employment to represent a more important criterion for their own and their partners' childcare contributions. The findings of shared childcare improving relationship stability has also been found in a Dutch and a British study (Kalmijn, 1999; Sigle-Rushton, 2010). While the lack of association between the housework division and separation risk contradicts the significant relationships found by previous US studies focussing on marital dissatisfaction (Belsky et al., 1986; Helms-Erikson, 2001; Pina & Bengtson, 1993; Wilkie et al., 1998), it may be that dissatisfied couples are still more reluctant to take the step towards separation or divorce when they have dependent children than without children or with grown up children.

Domestic Work, Childbearing, and Relationship Stability among British Couples Overall, these results suggest that gender inequality in the division of housework and childcare is significantly associated with the risk of partnership dissolution. This contrasts with the insignificant results in Chan and Halpin's (2002) study of divorce among British couples. The variation can probably be explained by the different samples used in our study, which investigates the associations separately for childless women and mothers and includes cohabiting as well as married couples.

Outsourcing of housework generally does not seem to be a suitable substitute for men's contributions to facilitate childbearing or relationship stability. Only the use of formal childcare is positively associated with couples' likelihood to have a second child. This is in line with results found for second birth decisions in Italy (Cooke, 2008). While the presence of another member in the household also seems to increase second births in Italy, we do not find a significant effect for informal help in the UK. Possibly, parents may feel that grandmothers who take care of the first child may not be able or willing to provide significant help with childcare for a second child. The positive effect of formal childcare use could also represent a positive effect (or the attempt to catch-up) of some women with greater ability or willingness to purchase formal childcare, which is very expensive in the UK compared to other countries.

Overall, the findings suggest women's expectations of their own and their partners' domestic work contributions vary between family outcomes and life course stage. We also find different mediating factors to be important for childless couples and parents. Future research should continue to look into differences by life course stage, ideally including more detailed measures of the childcare division in couples, perceptions of fairness, partnership quality, and bonds between parents and children to shed more light on the positive association between fathers' childcare involvement and relationship stability. A larger sample size would enable a more detailed examination of differences between marriages, cohabitations preceding marriages and long-term

Domestic Work, Childbearing, and Relationship Stability among British Couples cohabiting unions. The robustness of the findings should also be tested further by modelling the division of domestic work simultaneously with childbearing and separation events to account for additional unobserved factors. In a few years, the new British Understanding Society panel survey should make many of these research extensions possible.

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| | Partnered c women age | | Partnered women aged 20-45 with one child | | |
|--|--------------------------|-----------|---|-----------------------|--|
| | Mean/ | Standard | Mean/ | Standard deviation | |
| At first year observed in the sample | Percentage | deviation | Percentage | | |
| Woman's share of weekly housework time | 62.64 | 20.60 | 72.50 | 21.14 | |
| Help with housework | 4.38 | | 2.64 | | |
| Woman main childcare responsibility | | | 69.96 | | |
| Man shares childcare responsibility | | | 32.50 | | |
| Informal day-care | | | 31.34 | | |
| Formal day-care | | | 21.75 | | |
| Only parental childcare | | | 46.92 | | |
| Woman's gender role attitude factor | 3.48 | 0.60 | 3.32 | 0.68 | |
| Woman's paid work hours | 34.95 | 14.63 | 21.96 | 18.18 | |
| Man's paid work hours | 37.10 | 19.74 | 36.90 | 21.29 | |
| Couple's gross monthly earnings (GBP) | 2013.36 | 1100.30 | 1630.37 | 1173.08 | |
| Woman high education | 24.09 | | 12.24 | | |
| Woman medium education | 47.00 | | 39.18 | | |
| Woman low education | 28.90 | | 48.59 | | |
| Man high education | 24.47 | | 13.58 | | |
| Man medium education | 44.13 | | 46.57 | | |
| Man low education | 31.40 | | 39.85 | | |
| Woman's age | 28.05 | 5.70 | 30.89 | 6.73 | |
| Man's age | 30.81 | 7.34 | 33.26 | 7.71 | |
| Married | 32.54 | | 53.56 | | |
| Relationship duration | 2.85 | 3.38 | 5.39 | 5.67 | |
| Age of first child in months | | | 64.63 | 66.74 | |
| Scotland | 17.67 | | 22.18 | | |
| Wales | 9.36 | | 15.86 | | |
| England | 72.97 | | 61.96 | | |
| No. of couples | 1205 | | 1130 | 1205 | |
| No. of couple years | 3960 | | 3458 | 3960 | |

Table 1: Descriptive statistics for the analysis of first and second births

Source: Author calculations based on BHPS 1992-2005.

| Table 2: Descriptive statistics for | the analysis of relationsh | p breakdown |
|---------------------------------------|---------------------------------------|-------------------|
| F F F F F F F F F F F F F F F F F F F | · · · · · · · · · · · · · · · · · · · | r · · · · · · · · |

| | Partnered women ag | | Couples with children<13 years | | |
|---|-----------------------|--------------------|--------------------------------|--------------------|--|
| At first year observed in the sample | Mean/ Percentage | Standard deviation | Mean/ Percentage | Standard deviation | |
| Woman's housework share | 63.10 | 21.14 | 76.70 | 19.69 | |
| Help with housework | 4.29 | | 2.13 | | |
| Mother main childcare responsibility | | | 71.08 | | |
| Father shares childcare | | | 28.92 | | |
| Formal childcare | | | 11.85 | | |
| Informal childcare | | | 24.24 | | |
| Only parental care - omitted | | | 63.91 | | |
| Woman's gender role attitude factor | 3.44 | 0.59 | 3.18 | 0.65 | |
| Woman's paid work hours | 33.68 | 16.08 | 16.66 | 17.06 | |
| Man's paid work hours | 35.37 | 21.03 | 36.74 | 22.24 | |
| Couple's gross monthly earnings (GBP) | 1950.05 | 1241.53 | 1497.70 | 1232.33 | |
| Woman earns less than 40% of HHincome | 39.69 | | 77.03 | | |
| Woman earns between 40% and 60% | 43.10 | | 13.71 | | |
| Woman earns more than 60% | 17.21 | | 9.25 | | |
| Both partners high education | 12.96 | | 4.18 | | |
| Both partners medium education | 20.58 | | 13.67 | | |
| Man more educated than woman | 21.54 | | 27.63 | | |
| Woman more educated than man | 25.41 | | 14.75 | | |
| Both partners low education | 17.02 | | 35.99 | | |
| Difference in gender role attitudes (woman - man) | 0.16 | 0.69 | 0.08 | 0.68 | |
| Woman's age | 31.13 | 9.57 | 33.50 | 7.08 | |
| Age difference (Woman-man) | -2.85 | 6.15 | -2.43 | 4.79 | |
| Married | 37.36 | | 74.79 | | |
| Either partner previously divorced | 12.52 | | 18.03 | | |
| Relationship duration | 3.29 | 5.88 | 8.74 | 6.73 | |
| Age of youngest child in years | | | 4.06 | 3.82 | |
| Number of children | | | 1.68 | 1.02 | |
| Scotland | 20.16 | | 21.37 | | |
| Wales | 11.82 | | 19.82 | | |
| England | 68.03 | | 58.81 | | |
| No. of couples | 2777 | | 2304 | | |
| No. of couple years | 13309 | | 12681 | | |

Source: Author calculations based on BHPS 1992-2005.

| | First births | | | | Second births | | | | |
|--|--------------|-------------------|---------|---------|---------------|----------|-----------|----------------------|--|
| | Мо | Model 1 | | Model 2 | | Model 3 | | Model 4 ^a | |
| | В | RSE | В | RSE | В | RSE | В | RSE | |
| Help with housework | -0.282 | 0.226 | -0.219 | 0.229 | 0.117 | 0.191 | 0.116 | 0.219 | |
| Formal childcare | | | | | 0.298 | 0.146* | 0.359 | 0.181* | |
| Informal childcare | | | | | 0.111 | 0.132 | 0.195 | 0.163 | |
| Only parental care - omitted | | | | | | | | | |
| Woman's housework share Woman's housework share | -0.0001 | 0.002 | 0.022 | 0.013† | -0.002 | 0.002 | -0.005 | 0.003† | |
| squared | | | -0.0002 | 0.0001† | | | | | |
| Mother main childcare responsibility | | | | | -0.055 | 0.108 | 0.020 | 0.123 | |
| Father shares childcare - omitted | | | | | | | | | |
| Woman's gender role | | | | | | | | | |
| attitudes | -0.108 | 0.082 | -0.119 | 0.085 | -0.186 | 0.074* | -0.185 | 0.090* | |
| Woman's paid work hours | -0.006 | 0.004† | -0.008 | 0.004* | -0.018 | 0.004*** | -0.016 | 0.005*** | |
| No. of couples | 1205 | | 1205 | | 1130 | | 933 | | |
| No. of couple years | 3960 | | 3960 | | 3458 | | 2647 | | |
| No. of births | 492 | | 492 | | 535 | | 350 | | |
| Wald chi ^{2 b} | 170.14 | 170.14*** 171.16* | | *** | ** 124.14*** | | 125.25*** | | |
| Imputation cycles | 5 | | 5 | | 5 | | 5 | | |

| Table 3: Cox proportional hazard models of the risk of first and second births |
|--|
|--|

Note: All models are based on the BHPS 1992-2005 and include controls for men's paid work hours, couples' monthly gross income, educational levels of both partners, age and age squared of men and women, marital status, relationship duration, survey year and dummy variables for Scotland and Wales. Models 3 and 4 also include the first child's age in months and its square. 'x' symbolises an interaction. Missing items are imputed using chained equations. ^a Model 4 is based on a sample of mothers in paid work. ^b Model fit statistics are based on models before imputation.

 $^{\dagger}p < .10 \ ^{*}p < .05. \ ^{**}p < .01. \ ^{***}p < .001.$

| | Childless couples | | | | Couples with children aged under 13 years | | | |
|-----------------------------------|-------------------|-------|---------|--------|--|--------|----------------------|---------|
| | | | | | | | | |
| | Model 5 | | Model 6 | | Model 7 | | Model 8 ^a | |
| | В | RSE | В | RSE | В | RSE | В | RSE |
| Help with housework | 0.345 | 0.264 | 0.334 | 0.266 | 0.116 | 0.308 | 0.087 | 0.380 |
| Formal childcare | | | | | -0.039 | 0.220 | 0.054 | 0.263 |
| Informal childcare | | | | | 0.231 | 0.169 | 0.403 | 0.202† |
| Only parental care - omitted | | | | | | | | |
| Woman's housework share | -0.004 | 0.004 | -0.047 | 0.022* | -0.002 | 0.003 | -0.004 | 0.004 |
| Woman's housework share | | | | | | | | |
| x gender role attitudes | | | 0.012 | 0.006* | | | | |
| Mother main childcare | | | | | | | | |
| responsibility | | | | | 0.397 | 0.169* | 0.654 | 0.222** |
| Father shares childcare - omitted | | | | | | | | |
| Woman's gender role | | | | | | | | |
| attitudes | 0.263 | 0.187 | -0.578 | 0.451 | 0.256 | 0.129* | 0.259 | 0.173 |
| Woman's paid work hours | -0.002 | 0.007 | -0.002 | 0.007 | -0.006 | 0.005 | 0.0004 | 0.007 |
| No. of couples | 2777 | | 2777 | | 2304 | | 1812 | |
| No. of couple years | 13309 | | 13309 | | 12681 | | 8557 | |
| No. of separations | 192 | | 192 | | 288 | | 173 | |
| Wald chi ^{2 b} | 139.8*** | | 137.13 | *** | 105.36* | ** | 63.98** | * |
| Imputations cycles | 5 | | 5 | | 5 | | 5 | |

Table 4: Cox proportional hazard models of the risk of partnership breakdown

Note: All models are based on the BHPS 1992-2005 and include controls for men' paid work hours, couples' monthly gross income, interactions between women's relative earnings and marital status, interactions between both partners educational levels, women's age, differences in age and gender role attitudes between partners, relationship duration, whether one partner experienced previous marital breakdown, the survey year and dummy variables for Scotland and Wales. Models 7 and 8 also include the number of children in the household and the youngest child's age. 'x' symbolises an interaction. Missing items are imputed using chained equations.

^a Model 8 is based on a sample of mothers in paid work. ^b Model fit statistics are based on models before imputation. $^{\dagger}p < .10 ~ *p < .05$. **p < .01. ***p < .001.