

Power and the Gendered Division of Contraceptive use in Western European Couples

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Abstract

Recent research has approached contraceptive use, or “fertility work”, as another household task that is primarily managed by women. Building on the theoretical frameworks of relative resource theory and gender perspectives, this study investigates the association between partners’ power (measured as their relative education, division of housework and decision-making) and the choice of male versus female, or no contraception. Data from the Generations and Gender Survey for four Western European countries (Austria, Belgium, France and Germany; 2005-2010) are used to examine the hypotheses with multinomial logistic diagonal reference models. The results show that man’s and woman’s educational level are equally important predictors for a couple’s contraceptive method choice. Furthermore, the findings suggest that households in which the man performs more housework or the woman has more say in decisions are more likely to rely on male methods or female sterilization, rather than on the more commonly used female reversible methods.

Key words: contraception, decision-making, education, gender, housework/division of labour, power

1. Introduction

Recently, some scholars have extended the established observation that women still perform the majority of housework toward the domain of contraception (Bertotti, 2013; Fennell, 2011). Couples' "fertility work", or the division of contraceptive responsibility between partners, also seems to fall primarily on women's shoulders. On the one hand, as most effective contraceptives are reversible and female, it follows logically that their use exceeds that of permanent and/or male methods. In Western Europe, 58.9 per cent of couples in which the woman is aged 15-49 use the pill, contraceptive injections, implants or intra-uterine devices, compared with 2.9 per cent relying on vasectomy, 6.3 per cent on tubal ligation and 7.6 per cent on condom use (United Nations, 2013). However, on the other hand, the observation that also the uptake of female sterilization exceeds that of male sterilization—although both are similarly effective and the latter implies lower physical and financial costs (Shih et al., 2011)—indicates that contraceptive choice is not purely a product of availability constraints (Fennell, 2011). It has been suggested that contraception shifts from being an individual's own responsibility and a means to protect him/herself against unintended pregnancy in the beginning of a relationship, toward a shared responsibility that is influenced by broader relationship dynamics in long-term relationships.

Despite the growing attention for the importance of incorporating the relationship context when examining contraceptive behaviour (e.g. Grady et al., 2010; Kusunoki and Upchurch, 2011; Manning et al., 2009; Stolley, 1996), research on the social determinants of contraceptive use has mainly studied the female population, because reproduction and contraception are often framed as a female sphere of influence (Edwards, 1994; Fennell, 2011). Moreover, the majority of studies, also those that have taken men's as well as women's preferences and childbearing desires into account, have limited their attention to individual demographic characteristics, such as the influence of educational attainment or

income level on the adoption of certain contraceptive methods (Anderson et al., 2012; Martinez et al., 2006; Moreau et al., 2006; Mosher and Jones, 2010; Oddens et al., 1994a, 1994b; Spinelli et al., 2000).

Our paper aims to examine the association between couples' characteristics and their division of contraceptive responsibility. Because partners can have different needs and desires concerning contraception, they may not assess contraceptive methods in the same way (Grady et al., 1999). This implies that they will have to find a way to resolve differentials in priorities and perceptions. Elaborating on Bertotti's (2013) and Fennell's (2011) studies, two alternative power perspectives—the relative resource theory and the gender perspectives—are applied. As studies consistently find that higher marital power, or a partner's ability to impose his/her will on the other (Blood and Wolfe, 1960), increases one's say in couples' decisions-making (Lachance-Grzela and Bouchard, 2010; Mannino and Deutsch, 2007), there is also a growing awareness that power within sexual relationships may affect individuals' ability to meet their reproductive goals (Grady et al., 2010).

The main contributions of this research are threefold. First, to the best of our knowledge, it is the first to investigate whether and how power dynamics—measured as partners' relative education, the division of housework and decision-making power—are related to couples' male versus female contraceptive method choice. Previous studies' unilateral focus on how one's higher socioeconomic status is associated with more effective contraceptive use (Anderson et al., 2012; Martinez et al., 2006; Moreau et al., 2006; Mosher and Jones, 2010; Oddens et al., 1994a, 1994b; Spinelli et al., 2000) implicitly linked contraception to (particularly women's) empowerment and the ability to take control. By incorporating a couple perspective, the question can be raised whether this control over the couple's contraceptive domain leads men or women to either retain contraceptive responsibility or to transfer it to their partner. Until now, it remains unclear whether

contraceptive responsibility can be linked to partners' higher or lower power. Second, by taking both reversible and permanent methods into account, we go beyond previous research that primarily looks at using any contraceptive, or on practicing either reversible or permanent contraception. Third, we focus on the context of Western Europe. As compared to the United States, research to contraceptive use has been rather limited in this region, although important differences have been identified (Mosher and Jones, 2010; United Nations, 2013). Whereas the first is characterized by notably higher rates of unintended pregnancy and sterilization, the latter shows higher prevalence of hormonal pill use and intra-uterine device. As this variance stems from many factors—cultural, legal, economic as well as health care related (Mosher and Jones, 2010), caution is needed when expanding conclusions drawn from research in the US to Western Europe. A subsample of the first wave of the Generations and Gender Survey (Austria, Belgium, France and Germany; 2005-2010) is analysed by using diagonal reference models, as this survey provides some of the most recent, nationally representative data available on contraceptive use patterns.

2. Previous research on the link between power and couples' contraceptive use

The lion's share of sociological research that has focused on the exercise of marital power in partners' joint decision making, has investigated how power processes shape the division of household chores, childcare and paid labour (Coltrane, 2000; Lachance-Grzela and Bouchard, 2010). Only limited attention has been paid to reproductive choices, and more specifically contraceptive use, as a possible outcome of couples' power balance (Grady et al., 2010) but a number of scholars does focus on the influence of partner differentials on couples' contraceptive use. Two types of studies can be identified. The first type focuses on asymmetries in partners' resources. Studies carried out in the United States have pointed toward the importance of taking couple heterogamy—in terms of age, education or race—into account when examining methods of contraception. Generally, it has been shown that the

fewer similarities partners have, the less likely it is that they will use contraception (Ford et al., 2001; Kusunoki and Upchurch, 2011). A common explanation for these findings is that because of diverse sexual experience and knowledge, partners with differing characteristics have more difficulty in communicating effectively with each other about which contraceptive method to use (Ford et al., 2001; Kusunoki and Upchurch, 2011).

The second type of study examines partners' beliefs and commitment to the relationship. Having more traditional gender-role attitudes has been linked to a higher likelihood of opting for tubal ligation whereas couples' in which the wife holds more modern values seem to be more likely to choose for vasectomy (Stolley, 1996). Furthermore, research has demonstrated that having more relationship alternatives or lower commitment increases a person's say in contraceptive choice (Grady et al., 2010). At the same time, less committed relationships (e.g. occasional vs. cohabiting partners) and lower relationship intimacy have been found to be related to less contraceptive use and more inconsistent use (Kusunoki and Upchurch, 2011; Manlove et al., 2007; Moreau et al., 2006). Finally, Manning and colleagues (2009) found a negative relationship between a partner's perceived controlling behaviour and partner inferiority, and consistent condom use.

Of particular relevance is the study of Grady and colleagues (2010) that combines both types of research and identifies power as a multi-layered construct, thereby paying attention to the influence of partners' structural characteristics (e.g. education and income) as well as the attitudes and beliefs with regard to their relationship (e.g. relationship commitment, relationship alternatives and sex role egalitarianism). The results indicate that both power dimensions are associated to contraceptive method preference and choice. Their conceptualization of power—as a construct that can be identified on different levels—echoes Wrong's (1988, p. X) established definition of power as both a capacity, referring to resources, and a social relation manifested through interaction. We follow this approach.

Turning to the empirical observation of power, it is important to recognize that power is “dispositional” as it is attributed to, rather than inherently present in, individuals or groups (Wrong, 1988). We follow Grady et al.’s (2010) and Wrong’s (1988) approach by looking at someone’s control over resources as well as at his/her actual performance of power in a social relation. So, first, we focus on partners’ differential educational attainment as a main resource of structural power. It is argued that education is a form of human capital as it develops habits, skills, resources and abilities that enable individuals to achieve a better life and enhance their sense of personal control (Mirowsky and Ross, 2003). Whereas most research focuses on the indirect value of education, such as higher incomes or better and safer jobs (Cutler and Lleras-Muney, 2006), the human capital perspective pays attention to the direct value of education (Sen, 1997). Higher educational level can be interpreted as “learned effectiveness” by which different health-producing behaviours are united into a coherent healthy lifestyle (Mirowsky and Ross, 2003). In other words, education as such reflects a range of noneconomic social competences such as health-related knowledge, better use of information or prestige (Braveman et al., 2005). Furthermore, in comparison with for instance current wage or occupational status, level of education usually precedes labour market entry and is less likely to be influenced by joint couple decisions concerning paid work (Eeckhaut et al., 2014). Education also has the advantage that the unemployed and non-employed are not excluded (Monden and de Graaf, 2013).

Second, the power resulting from interactions between partners, or interactional power, is approached as the division of housework and decision-making. Part of this household organization may be explained by partners’ (differentials in) resources, such as education, but the linearity of this association has been repeatedly debated, indicating that negotiations concerning this household distribution entail a more complex process with multiple forces at play (Lachance-Grzela and Bouchard, 2010). Extensive literature showed

the importance of indicators such as partners' time spent in the workforce or gender attitudes. Therefore, it can be stated that the measurement of the division of (especially routinely) household tasks and having the final say in decisions capture another, additional kind of power imbalance.

3. Theoretical framework and hypotheses

The introduction of the birth control pill in Western Europe during the 1960s shifted contraceptive responsibility from men to women, and gave women greater power to control reproductive decisions (Skouby, 2004). Nowadays, however, many women also report that they bear too much of the responsibility for contraception (Glasier et al., 2000). The question can be raised whether contraceptive responsibility should be perceived as a burden or an indication of lower power, versus as a way of holding control or an indication of higher power. Following Fennell (2011) and Bertotti (2013), we apply the theoretical lens of the gendered division of labour to partners' roles in contraceptive decision-making in order to formulate two contrasting hypotheses.

One theoretical basis for understanding *contraception as the outcome of one's lower power* is the relative resource theory. This perspective states that partners engage in a relationship or marriage with differing levels of resources (Blood and Wolfe, 1960). The greater a partner's resources—such as level of education, income and occupational status—the higher his/her power (Lachance-Grzela and Bouchard, 2010; Mannino and Deutsch, 2007). This marital power can be employed to control decision-making in diverse areas (Mannino and Deutsch, 2007; Stolley, 1996). The underlying assumption of the relative resource perspective is that domestic responsibilities are considered a burden and that both partners try to avoid them through bargaining (Lachance-Grzela and Bouchard, 2010). Similarly, multiple scholars refer to contraceptive choice as a negative choice, where the “least worst option” is

preferred (Darroch, 2008; Walsh, 1997). The choice of a specific method seems often to result from dissatisfaction or frustration with another method (Guttmacher Institute, 2008; Moreau et al., 2007).

With regard to reversible contraceptives, this is reflected in the high levels of contraceptive discontinuation due to method-related reasons, and the high prevalence of method switching (Grady et al., 2002; Lessard et al., 2012; Vaughan et al., 2008). For instance, high movement between the pill and condom use has been identified (Grady et al., 2002; Huber et al., 2006; Oddens et al., 1994a; Vaughan et al., 2008). As concerns the first, despite the high prevalence of the use of oral contraceptives, many women report side effects, such as mood swings and weight gain (Huber et al., 2006; Moreau et al., 2007; Mosher and Jones, 2010). With regard to condom use, decreased sexual pleasure and an unsatisfied male partner are the most frequently reported reasons for dissatisfaction and stopping use (Moreau et al., 2007; Mosher and Jones, 2010). Empirical evidence of bargaining processes between partners as concerns reversible contraceptive use is lacking, but the results of Grady and colleagues (2002) point to an association between educational attainment and method switching. Whereas higher educated married women are less likely to switch from the pill to less-effective methods than lower educated, they show higher rates of switching from the pill to the condom. For condom use, more years of education are related to reduced rates of switching to female reversible methods. This suggests that, as some studies concluded for the division of housework (Lachance-Grzela and Bouchard, 2010), higher levels of women's education are related to higher male engagement in "fertility work".

With regard to permanent methods, both male and female sterilization entail some similar costs that may be perceived as a burden: the decision is meant to be non-reversible and slight pain might be experienced after the procedure (Shih et al., 2014). However, vasectomy is considered a "better" method as it implies lower costs, both financially and

physically (in terms of surgical risk, invasiveness and the possibility of complications) (Shih et al., 2011). Moreover, women report more favourable opinions about vasectomy than tubal ligation (Forrest and Fordyce, 1993). Following the resource perspective, these findings suggest that higher levels of female power can enable women to bargain their way out of a surgical sterilization procedure. In sum, we hypothesize that:

Hypothesis 1: Couples in which the woman has greater relative power (i.e. higher relative education, performing less housework than average and/or making more decisions than on average) will be more inclined to opt for reversible or permanent male contraceptives than for female methods.

Alternatively, one might also suggest that greater resources or higher power are closely related to higher opportunity costs of having (additional) children, for women in particular (Balbo et al., 2013). These costs refer to both economic and noneconomic losses due to (temporary) withdrawal from the labour market (Kravdal, 1992, 1994). The higher women's accumulation of resources, the more costly contraceptive failure will be perceived, and the more postponement of childbearing will be valued in order to be able to pursue a career or increase earning power (Gustafsson, 2005; Van Bavel, 2010). It can be expected that higher power enables women who face high opportunity costs to opt for the most effective contraceptive method available (i.e. female hormonal methods or permanent methods) in order to reduce the risk of pregnancy, which supports the approach of *contraception as the outcome of one's higher power*. However, this argument reduces contraceptive decision-making to a rational cost-benefit calculation (Balbo et al., 2013; Coltrane, 2000; Ferree et al., 1991) and cannot explain why women are more likely to get sterilized as compared to men, although both procedures are similarly effective (Shih et al., 2014). More in general, the relative resource perspective has been subject to criticism because of its assumption that household decisions are governed by gender-neutral exchange

relations (Coltrane, 2000; Ferree, 1991). It ignores that individuals behave according to social and cultural meanings (Coltrane, 2000), and that power bargaining within couples might be based on the need or desire to maintain relationships rather than merely on the possession of external status or resources (Sprecher et al., 2006).

Gender perspectives, on the other hand, posit that men and women ‘do’ gender in everyday activities by reinforcing and reproducing their identity as a man or a woman through interaction (West and Zimmerman, 1987), according to socially-constructed gender roles that assign how men and women are expected to behave (Lachance-Grzela and Bouchard, 2010). For instance, avoiding or performing housework helps men and women respectively to define and express their gender identity within and outside the home (Coltrane, 2000; Lachance-Grzela and Bouchard, 2010). It is suggested that both men and women will particularly try to neutralize their deviant gender roles (Greenstein, 2000). Dependent men and breadwinner women tend to exaggerate their male and female identities by respectively engaging less or more in the domestic sphere than could be expected based on their status. Like housework, contraception is generally considered as a female sphere of influence in advanced economies, mainly because women bear the physical costs of pregnancy and birth, and they are traditionally responsible for childcare (Fennell, 2011; Grady et al., 2010; Thomson, 1997).

It remains unclear, however, whether women take contraceptive responsibility as a part of their female role or whether they bear contraceptive responsibility because their partner does not. Multiple studies that examine the use of reversible methods suggested that women engage in “contraceptive gatekeeping” as many report a clear preference for being primarily in charge of contraception in their relationship (Fennell, 2011; Lessard et al., 2012). In addition, men can perceive some kind of block to engaging in contraceptive decisions, even if they had wanted to participate more (Fennell, 2011). At the same time, studies have

shown that the exclusion of men from the reproductive domain enforces them not to take responsibility in a female domain (Edwards, 1994).

Either way, research supporting the gendered approach on reversible contraceptives remains scant, but a few studies point in the suggested direction. Martinez and colleagues (2006), for example, conclude that men's education is positively related to the likelihood of using a condom which indicates that men's higher social status associates with condom use, whereas Fennell (2011) finds that women's better sexual education encourages them to hold contraceptive control instead of letting their less-informed partner contribute.

As concerns permanent methods, studies have shown that men's higher education relative to that of their partner is associated with a higher likelihood of choosing vasectomy (Bumpass et al., 2000). In turn, disadvantaged men are more likely to avoid vasectomy (Bertotti, 2013; Shih et al., 2014). One explanation that has been raised is that this is to compensate for their subordinate social status, as engagement in a female domain may be perceived as a threat to their masculinity. Similarly, if a woman is higher educated than her partner, she is more likely to opt for sterilization herself (Bertotti, 2013; Bumpass et al., 2000; Forste et al., 1995), although women's educational level in sich is negatively related to female sterilization (Anderson et al., 2012; Mosher and Jones, 2010; Oddens et al., 1994a, 1994b). Following the gender perspectives, we expect that:

Hypothesis 2: Couples in which the woman has greater relative power (i.e. higher relative education, performing less housework than average and/or making more decisions than on average) will be less inclined to opt for reversible or permanent male contraceptives than for female methods.

One might also argue that contraception can be perceived as a task for a male breadwinner, given their dominant and decision-making role. Fennell (2011) for instance suggests that

some men perceive contraceptive responsibility as a part of their role as a responsible partner. Also studies in several Central and Eastern European countries find that male contraceptive responsibility (withdrawal in particular) is associated with pride and masculinity, and is perceived as a skill in discipline and an ability to take care of their partner (IPPF, 2012). However, it is important to bear in mind that these countries are characterized by significantly higher rates of male contraceptive use as compared to Western European countries (United Nations, 2013), higher levels of gender inequality (UNDP, 2015), and that—to the best of our knowledge—no evidence pointing in a similar direction for a Western European context has been found.

4. Method

4.1. Data

The Generations and Gender Survey (GGS) is a European longitudinal panel survey collecting representative data in 18 countries, initiated by the United Nations Economic Commission for Europe (<http://www.ggp-i.org/>; UNECE, 2005). The aim is to gather detailed information concerning different socio-demographic themes, such as partnership and fertility, during at least three waves in each country. Cross-country comparability is ensured by providing the survey design, common definitions, a standard questionnaire, and common instructions that each participating country should follow (Vikat et al., 2007). Our paper focuses on data from the first wave, gathered in four Western European countries: Austria, Belgium, France and Germany (2005-2010). Face-to-face interviews were conducted, and the overall response rate ranges from a relatively low 42% in Belgium to 69% in France, which is comparable with other large-scale European surveys.

The original dataset contains 32,259 respondents aged between 18 and 85. Our analysis focuses on a subset of co-residential heterosexual couples aged 25 and above (so

education has been mostly completed), in which the woman is younger than 50. Only couples with no desire for (additional) children are included in the sample (N=7,287). As our study examines the option for reversible as well as permanent methods, this limitation enhances comparability. We use the respondents' reports of partner characteristics and preferences as a proxy. Couples in which one of the partners was physically unable to have children (apart from being sterilized) (N=465) are removed from the sample. Couples in which both partners were sterilized (N=37) or one was sterilized before cohabitation with his/her current partner (N=77) are also excluded. In addition, couples relying jointly on the pill and condoms (N=173), or on withdrawal or safe period method (N=146) are omitted because of their small number. Also those practicing "other contraceptives or methods" (N=99) are excluded. Lastly, cases with missing information are deleted (N=292; 4.6%). The final analytic sample contains 5,998 couples.

4.2. Variables

4.2.1. Contraceptive use

Contraceptive use is classified according to two parameters. We differentiate between male and female, and reversible and permanent methods. Four categories are distinguished. 1: Male reversible (condoms), 2: Female reversible (the pill, contraceptive injections, the morning-after pill, IUDs or implants), 3: Male permanent (male sterilization) and 4: Female permanent (female sterilization). A fifth category containing couples that are not relying on contraception is added to avoid selection on the dependent variable. Using female reversible contraception is taken as the reference category, as these methods are generally the most widely practiced.

4.2.2. Power

Structural power is measured by educational level. *Man's education* and *woman's education* are coded according to the highest level of education successfully attained, based on the ISCED97 classification. We distinguish between three educational categories: 1: Low (up to lower secondary level), 2: Middle (upper secondary level or non-tertiary post-secondary level), and 3: High (Tertiary education [reference category]). *Relative education* is measured as the difference between the woman's and man's education (education woman – education man).

Interactional power is measured by the division of housework and decision making. Both indicators were only questioned in a relative way rather than as an absolute measure. As previous research has repeatedly shown that particularly *routinely housework* is related to power in the household (Lachance-Grzela and Bouchard, 2010), we focus on the following four tasks: preparing daily meals, doing the dishes, shopping for food, and vacuum cleaning the house. Which partner carried out these household tasks was determined by means of seven categories: “always respondent”, “usually respondent”, “respondent and partner about equally”, “usually partner”, “always partner”, “always or usually other persons in the household” and “always or usually someone not living in the household”. Tasks shared equally, as well as tasks done by a third person (in or outside the household), are coded 0 (Geist and Cohen, 2011). If a task was always performed by the woman, a score of -2 is assigned and if a task was usually performed by the woman, a value of -1. Similarly, if the man always or usually did the routinely household chores, a value of 2 and 1 is assigned respectively. The mean score of the division of routinely housework is calculated if at least two valid answers were given.

To measure *decision-making* power, a similar index is constructed. Respondents were asked to indicate “who makes decisions about the following issues” in their household: routine purchases for the household, occasional more expensive purchases for the household, the time you spend in paid work, the time your partner spends in paid work, the way children are raised, and social life and leisure activities. The possible answer categories are similar to those with regard to housework. To enhance the clarity in reporting our results, this index is reversed compared with the index measuring the division of housework. Scores range from -2 (the man decides everything) to 2 (the woman decides everything).

Finally, for the bivariate and multivariate analyses, all power measures are grand-mean centred (mean score respondent – mean score of all respondents). In this way, a negative score indicates lower female and higher male power than averagely while a positive score indicates lower male and higher female power than averagely.

4.2.3. *Control variables*

We control for *man's age* (grand-mean centered), *woman's age* (grand-mean centered) and *marital status* (0: Married; 1: Cohabiting). *Parity* is coded as 1: No children (reference category), 2: One child, 3: Two children or 4: Three or more children.

4.3. *Analysis*

Two types of measures have generally been used to study the effects of couples' educational differences (Eeckhaut et al., 2013). The first, difference measures, focuses on the difference in education between partners by, for instance, calculating the absolute numeric difference (e.g. years education man – years education woman) or computing a categorical difference variable (e.g. three categories: 1. Homogamy, 2. Education man > education woman, and 3. Education man < education woman). The second, compound measures,

constructs a categorical variable with all possible combinations of man's and woman's education. Both types of measures have been subject to abundant criticism. Among others, difference measures struggle with multicollinearity problems when including the variables for absolute education and educational differences simultaneously in the model, whereas compound measures cannot disentangle the effects of partners' absolute and relative education.

Diagonal reference models (DRMs) provide an answer to both critics. This statistical procedure, suggested by Sobel (1981, 1985), was initially developed to examine the effects of social mobility, but has also proved successful in studying status inconsistency and heterogamy effects (Eeckhaut et al., 2013, 2014; Hendrickx et al., 1993). The main advantage of DRMs is that we can simultaneously model the impact of (1) man's absolute education, (2) woman's absolute education, and (3) the couple's relative education on contraceptive use. At the same time, we can determine the relative impact of man's and woman's absolute education on contraceptive method choice. Furthermore, other covariates such as our interactional power measures can be taken into account (for a detailed comparison between differences measures, compound measures and DRMs, see Eeckhaut et al., 2013).

DRMs start from the theoretical idea that homogamous couples represent the "core" of their group (Sobel, 1981). It is assumed that because these couples are not influenced by other (here: educational) groups, their values can be considered as the referents for heterogamous couples. When cross-tabulating man's and woman's education, the homogamous couples can be interpreted as the diagonal referents for heterogamous, off-diagonal couples (Eeckhaut et al., 2014). In other words, the values of heterogamous couples lie in-between those of the corresponding homogamous couples (Eeckhaut et al., 2013).

As our dependent variable is measured by means of five categories, we use multinomial logistic DRMs. The baseline model, without power effect and other covariates, can be represented as

$$B_{ijmk} = \frac{\exp(\theta_{ijm})}{\sum \exp(\theta_{ijm})}$$

$$\theta_{ijm} = p * \mu_{iim} + (1 - p) * \mu_{jjm}$$

where B_{ijmk} refers to the probability that respondent k uses contraceptive method m , given man's educational level i and woman's education j (Eeckhaut et al., 2014; Nieuwbeerta and Wittebrood, 1995). θ_{ijm} is the log odds that the same respondent k uses contraceptive method m . Parameters μ_{iim} and μ_{jjm} stand for the log odds that respondent k , with various types of educational homogamous couples, chooses contraceptive method m over other methods (Nieuwbeerta and Wittebrood, 1995). The terms p and $(1 - p)$ indicate the relative weight of the man's and woman's absolute education respectively (Sobel, 1981). Since p theoretically ranges from 0 to 1, a score below .5 indicates that the relative impact of woman's education is more important, whereas a score above .5 refers to a greater weight of man's education.

When we include the covariates (control variables, relative education, the division of housework and decision-making power) in the model, θ_{ijm} equals

$$\theta_{ijm} = p * \mu_{iim} + (1 - p) * \mu_{jjm} + \sum \beta_{dm} * h_{ijd} + \sum \beta_{em} * x_{ije}$$

The expected effect of relative education, over and above the effect of man's and woman's absolute education, is expressed by d different h variables (Eeckhaut et al., 2014). For the other covariates, we add e different x variables (Tolsma et al., 2009).

Finally, it is important to note that the couples (level 1) are hierarchically nested in countries (level 2), which implies that couples living in the same country tend to be more

similar than those living in different countries (Hox, 2010). This clustered data structure is taken into account by incorporating $N - 1$ country dummies in the DRMs. As such, θ_{ijm} in the final model equals

$$\theta_{ijm} = p * \mu_{iim} + (1 - p) * \mu_{jjm} + \sum \beta_{dm} * h_{ijd} + \sum \beta_{em} * x_{ije} + \sum \beta_{fm} * c_{ijf}$$

where we additionally include f different c variables to account for the country-level variance. The Jackknife procedure is used as a sensitivity test to check for influential countries by running the DRM four times, each time excluding one country (Rodgers, 1999). Overall, the estimates remain largely stable over the models (tables not shown). All parameters can be interpreted similarly to multinomial logistic regression analyses.

5. Results

5.1. Descriptive results

The descriptive results are presented in Table 1 (Table A in appendix displays the descriptives per country). With regard to the distribution of the dependent variable, no unexpected patterns appear. For both reversible and permanent contraceptives, the use of female methods exceeds that of male methods with 9.2% of the couples relying on male reversible contraception, 57.8% on female reversible contraception, 6.8% on male permanent contraception, and 11.1% on female permanent contraception. 15.1% of the couples do not use any method. Considering the power indicators, it is worth noting that relative education suggests that the couples in our sample are relatively homogamous ($\bar{x} = -0.05$); most couples are equally educated (62.7% [not shown in table]). With respect to decision-making ($\bar{x} = 0.20$), women hold relatively higher marital power, although the majority of couples make at least some decisions together (98.2% of all couples' scores range between -1 and 1 [not shown in table]). Not surprisingly, a different pattern is found for the division of housework (\bar{x}

= -0.75). Some 83% of the couples reported that the woman carried out more housework than her partner (not shown in table).

Table 1. *Descriptive statistics* (N = 5,998)

	Mean (SD) / Percentage
Contraceptive method	
Male reversible	9.2
Female reversible	57.8
Male permanent	6.8
Female permanent	11.1
No method	15.1
Man's education	
Low	14.6
Middle	55.9
High	29.6
Woman's education	
Low	17.4
Middle	55.7
High	26.9
Relative education	-0.05 (0.67)
Division of housework	-0.75 (0.67)
Decision-making	0.20 (0.34)
Man's age	42.98 (6.65)
Woman's age	40.09 (5.48)
Marital status	
Married	84.7
Cohabiting	15.3
Number of children	
0	6.3
1	18.6
2	49.3
≥ 3	25.8

Note: For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Table 2 summarizes the bivariate statistics for the main independent variables. First, the well-known association between men's and women's education, and contraceptive use is confirmed ($p < .001$). Largely similar contraceptive patterns can be observed according to men's and women's education. Female reversible contraceptives represent the most frequently-used method in all educational groups, but low-educated men and women rely least heavily on these methods. Focusing on the three less-represented methods, low- and

middle-educated men and women are mostly situated in the categories of tubal ligation. Furthermore, high-educated men and women more often rely on male contraceptives as compared to the lower-educated. A linear pattern is found for using no method, with the low-educated being most likely.

Second, the associations between all three power measures and contraceptive use are significant. Different processes are at play for male versus female, and reversible versus permanent methods. For couples relying on reversible male contraceptives, we find that men perform more household tasks and take slightly more decisions than on average. In couples relying on female reversible methods, women are relatively higher educated and do a larger share in housework, whereas in couples relying on female sterilization, women are relatively lower educated and have most decision-making power compared with couples preferring alternative methods.

Table 2. *Bivariate statistics: Contraceptive method by man's and woman's education, and by the couple's relative education, division of housework and decision-making power (N = 5,998)*

	Male reversible	Female reversible	Male permanent	Female permanent	No method	χ^2
Man's education						67.47***
Low	6.0	54.8	4.9	16.4	18.0	
Middle	8.6	59.0	6.9	10.6	15.0	
High	12.0	57.2	7.5	9.5	13.8	
Woman's education						114.72***
Low	6.6	51.0	4.4	16.8	21.2	
Middle	8.9	58.9	7.2	10.8	14.2	
High	11.5	60.1	7.4	8.1	12.9	
	Male reversible	Female reversible	Male permanent	Female permanent	No method	F
Relative education	-0.02	0.03	0.02	-0.05	-0.06	4.14**
Division of housework	0.07	-0.03	0.06	0.01	0.03	4.59**
Decision-making	-0.05	0.01	0.01	0.03	-0.04	8.59***

Note: For relative education, division of housework and decision-making, a negative score indicates higher male power than averagely whereas a positive score indicates higher female power than averagely. ***p<.001; **p<.01 (two-tailed tests).

5.2. Diagonal reference models

The estimates for the control variables do not substantially change when adding the three power measures. Also the inclusion of the three power variables separately or together in the model yields similar results. Therefore, only the full model is shown (Table 3). We rely on odds ratios for the interpretation of our results. The DRM largely confirms the patterns found in the bivariate analysis, but the educational differences for using male reversible, female reversible, or male permanent methods are not significant. The probabilities for homogamous couples ($\mu_{11} - \mu_{33}$) show a negative association between education and relying on female sterilization or using no method. Specifically, high- and middle-educated couples are significantly less likely to rely on tubal ligation or to not use contraception compared with low-educated couples (tubal ligation: $\mu_{11} = 16.6\%$, $\mu_{22} = 10.5\%$, $\mu_{33} = 6.3\%$; no method: $\mu_{11} = 40.5\%$, $\mu_{22} = 24.8\%$, $\mu_{33} = 22.6\%$).

The relative influence of men's and women's education can be inferred based on the value of the salience parameter p ($p = .351$). A value below $.5$ indicates that the woman's education primarily determines the contraceptive method. However, based on the 95% confidence interval ($.031; .672$ [not shown in table]), we can conclude that this weighting parameter does not significantly differ from $.5$. In other words, men's and women's educational level are approximately equally important in contraceptive use.

As concerns the power measures, only the interactional power dimension remains significantly related to contraceptive use. In couples in which the woman has greater relative power than averagely, men are generally more likely to take responsibility instead of relying on their partners' responsibility and – at the same time – women are more likely to practice tubal ligation than female reversible methods. Specifically, couples in which the man averagely performs more housework are more likely to use condoms than female reversible

methods (OR =1.218, $p < .05$). These couples are also more likely to rely on male sterilization (OR = 1.492, $p < .001$) or female sterilization (OR = 1.322, $p < .001$) instead of female reversible methods. With regard to decision making, couples in which the woman has more decision-making power than on average are more likely to rely on male sterilization (OR = 1.840, $p < .001$) or female sterilization (OR = 1.456, $p < .01$) than female reversible methods. At the same time, these couples are less likely to not use contraception (OR = 0.760, $p < .05$).

Table 3. *Parameter estimates for the multinomial logistic diagonal reference model with control variables, relative education, division of housework and decision-making power (N = 5,998)*

	Male reversible	Female reversible (Ref.)	Male permanent	Female permanent	No method
Saliency parameter			.351		
Odds ratios for the homogamous couples with educational level i (probability between brackets)					
μ_{11} (Ref.)	0.345 (9.9%)	1 (28.6%)	0.157 (4.5%)	0.580 (16.6%)	1.415 (40.5%)
μ_{22}	0.293 (12.2%)	1 (41.8%)	0.255 (10.7%)	0.251 (10.5%)*	0.593 (24.8%)*
μ_{33}	0.538 (23.4%)	1 (40.1%)	0.191 (7.7%)	0.156 (6.3%)*	0.564 (22.6%)*
Odds ratios for the control variables					
Age man	0.993		1.019	0.996	1.037*
Age woman	1.032*		1.074*	1.136*	1.057*
Married (Ref.)					
Cohabiting	0.807		0.605*	0.543*	0.827
0 children (Ref.)					
1 child	1.163		0.418*	0.724	0.567*
2 children	1.090		1.110	0.906	0.513*
≥ 3 children	1.039		1.496	1.661*	0.672*
Odds ratios for the power measures					
Relative education	0.949		0.956	1.015	1.008
Division of housework	1.218*		1.492*	1.322*	1.107
Decision-making	0.732		1.840*	1.456*	0.760*

Note: μ_{11} = both partners are low-educated (Ref.), μ_{22} = both partners are middle-educated, μ_{33} = both partners are high-educated. For age, these specifications resulted in the best model fit. For relative education, division of housework and decision-making, a score below 1 indicates higher male power than averagely whereas a score above 1 indicates higher female power than averagely. Models controlled for country dummies. Ref. = reference category. For low-educated couples (μ_{11}), the probability of being in the category of male reversible contraception is calculated as $\frac{0.345}{0.345+1+0.157+0.580+1.415} \times 100$. ***p<.001; **p<.01; *p<.05 (two-tailed tests).

6. Discussion

Based on the recent literature on “fertility work” (Bertotti, 2013; Fennell, 2011), this paper adopts a power perspective to obtain greater insight in couples’ choice of contraceptive method. Several important findings are worth noting. First, men’s and women’s education seem equally important in the method used. This confirms Bauer and Kneip’s (2013) conclusion that neither women nor men dominate proceptive behaviour and is an important addition to studies that have highlighted the relevance of taking men’s characteristics into account when studying fertility (Fennell, 2011; Grady et al., 2010; Thomson, 1997).

Second, we find some interesting differentials in contraceptive use according to educational level. A strong negative association is established between education and tubal ligation, which confirms earlier research (Anderson et al., 2012; Mosher and Jones, 2010; Oddens et al., 1994a, 1994b). These results are in line with housework studies that emphasized the importance of women’s absolute, rather than their relative, status in determining their share in housework (Gupta, 2007). Accordingly, sterilization research indicated that high-educated women can use their status (and the health-related knowledge that is associated with higher educational attainment), irrespective of that of their partner, to shift responsibility for contraception to the man (Bertotti, 2013). A similar negative linear pattern is found for using no contraception, with the middle- and high-educated being less likely to not use any method than the low-educated, which also reaffirms previous studies (Moreau et al., 2006; Oddens et al., 1994a, 1994b; Spinelli et al., 2000).

Third, our analyses reveal that couples in which the man averagely performs a larger share of household tasks and in which the woman has greater decision-making power are more likely to rely on vasectomy than on female reversible contraceptives—irrespective of education. This confirms results presented in previous research (Stolley, 1996). Similarly,

couples in which the man does more housework than averagely seem to be also more likely to opt for condom use instead of female reversible contraceptives. Thus, in line with our resource hypothesis (Hypothesis 1), the results indicate that households in which the woman averagely holds higher power are characterized by greater male responsibility for both reversible and permanent contraception, instead of female responsibility for reversible methods. It is interesting to interpret this conclusion in the light of Grady and colleagues' (2002) study. They found that married couples who rely on male condom use show significantly higher prevalence of switching to male sterilization than couples who use other (mostly female) contraceptive methods. Moreover, they show that only those who use condoms, as compared to couples relying on other reversible methods, are significantly more likely to adopt male instead of female sterilization. This suggests that, in addition to our separate findings for male reversible and male permanent methods, men who take contraceptive responsibility for reversible contraception tend to hold on to this when a couple decides to opt for a sterilization.

At the same time, we also find a positive association between the interactional power measures and practicing female permanent instead of reversible methods. This suggests that higher average male power relates to reliance on female reversible methods whereas higher average female power relates to practicing alternative methods. The finding parallels the abundant literature on side effects of hormonal methods that direct women to use other options (Johnson et al., 2013; Lessard et al., 2012). In this light, interactional power can strengthen women's bargaining position to rely on less-commonly used contraceptive methods, but does not necessarily translates in male contraceptive responsibility.

In combination with the absence of an effect of couple's relative education, this also strengthens our reasoning for taking multiple power indicators into account. Although sociologists have traditionally focused on the gendered gap in power resources in terms of

education, work positions or earnings (Coltrane, 2000; Lachance-Grzela and Bouchard, 2010), partners' resources have become increasingly equal (Stolley, 1996). In many OECD countries, the gender gap in educational attainment has been closing (this is confirmed in our descriptive results, Table 1) (OECD, 2012). The question remains which consequences this closing (or in some countries even reversing) gender gap may have on couple mechanisms, because findings in different contexts have been inconclusive. The lack of an association between relative education and sterilization in our research is in contrast with studies carried out in the US (Bertotti, 2013; Bumpass et al., 2000; Forste et al., 1995), but confirms a previous Belgian study to vasectomy versus tubal ligation (Lodewijckx, 1989). Moreover, Manning and colleagues' (2009) study among adolescents showed a strong association between relationship processes and condom use, whereas no associations were established for most structural measures. According to Stolley (1996), this can be interpreted as an indication of the increasing relevance of gender egalitarianism as a product of couples' interaction and communication, rather than as merely based on a rational appraisal of partners' relative resources. The associations that we find between housework, decision-making power and contraceptive responsibility suggest that also the latter can be perceived as a part of these interaction and communication processes that influence couples' gender egalitarianism. Although we find evidence for our *resource* hypothesis, it should be clear that we particularly find evidence that couples are more than the sum of their resources. Our conclusion that a more equal division of unpaid labour goes hand in hand with higher use of male methods or tubal ligation underlines the need for more research to further explore these relationship dynamics in advanced economies, as an addition or alternative to the primary focus on partners' resources.

In all, the results of our study also emphasize its unique contributions. Taking the relationship context into account sheds new lights on couples' contraceptive behaviour and

emphasizes the importance of both partners' as well as the couple's characteristics. By applying a multidimensional power perspective and using two alternative approaches (i.e. contraception as an outcome of lower or higher power), we pay attention to the diverse interpretations of contraception as a burden or as a way of holding control. Furthermore, the differentiation between five contraceptive categories enabled us to get more insight into the various processes at play. Whereas male reversible methods are only associated with housework tasks and non-use with decision-making, male and female permanent methods can be linked to both power measures.

Despite the strengths of this study, some limitations should be noted. First, because couple data are not available in the dataset of the GGS, partners' characteristics and childbearing desires are based on respondents' proxy reports. The main problem with proxy reports is the possible discrepancy between men's and women's answers (Lachance-Grzela and Bouchard, 2010). For example, men tend to overestimate their share of housework whereas women tend to underestimate men's contributions (Kamo, 2000). This bias is partly balanced out, because both male and female respondents are included in the sample. As a sensitivity test, we included gender in our models and no substantial differences were noted in the other estimates (table not shown). In addition, asking about the division of housework in a relative way (with answers ranging from "always respondent" to "always partner") shows less bias between partners' answers than asking about absolute hours (Kamo, 2000).

Although this latter argument compensates in some way for the potential bias of proxy reports, the absence of absolute measurements for the division of housework and decision-making is a second limitation of our study. Proportional measurements are valid and reliable instruments, but substantial differences in the amount of time spent in tasks across different households are masked and it remains unclear whether shifts in the proportion result from a change in the contribution of the woman, the man or both (Marini and Shelton, 1993).

Because absolute as well as proportional measurements have their strengths and weaknesses, it is suggested that future research could benefit from using both (Coltrane, 2000).

Third, there are some timing issues concerning the variables. Our study could have benefited from incorporating several other structural power measures, such as income or occupational role. However, these were measured at the time of the survey and not at the time of choosing the method of contraception. We opted to rely on educational differences, because these are less subjected to change, determine partners' comparative advantages in the labour market (Eeckhaut et al., 2014), and the unemployed and non-employed are not excluded (Monden and de Graaf, 2013). In addition, the division of labour and decision making were measured at the time of the survey, although these behaviours evolve over time. In an effort to restrict the respondents' life stage, we limited our sample to couples with no desire for (additional) children and in which the woman was aged between 25 and 49 at the time of the interview. Furthermore, respondents who had been sterilized before cohabitation with their current partner were omitted from the sample.

At the same time, the selection of our subsample raises some questions concerning the generalizability of our conclusions. Of particular relevance are the exclusion of couples with a desire for (additional) children at the moment of the survey, couples relying on dual-use or on natural family planning, and couples in which both partners are sterilized. With regard to the first, a sensitivity analysis including all respondents who meet our selection criteria (cfr. 4.1. Data), irrespective of their childbearing intentions, was performed. Table B.1 in appendix provides the descriptives for this alternative sample. Not surprisingly, the sample that does not take respondents' childbearing intentions into account is higher educated, has a more egalitarian division of housework and decision-making, is younger, shows a higher prevalence of cohabiting couples, and a lower number of children as compared to the sample that only includes respondents with no childbearing desire. Because couples' contraceptive

options are highly dependent on their desire for children, a control variable desire for children (0: no; 1: yes) is added to the original DRM, and the categories “Male permanent” and “Female permanent” are removed because sterilization is only a possibility for those with no (additional) desire. These two adaptations however do not substantially affect our estimations. Moreover, despite the significant differences in both samples’ characteristics, Table B.2 in appendix indicates that most findings are similar to the analyses presented in Table 3. The fact that the association between men’s involvement in housework and their higher likelihood of using male reversible methods is also significant in this model (OR = 1.239, $p < .01$) suggests that men’s contraceptive responsibility holds irrespective of partners’ childbearing desires. In other words, it seems that reversible contraceptive use is liable to co-residential couples’ power dynamics over the course of a relationship—before, during, and after childbearing. The negative association between decision-making and non-use also remains, but is no longer significant. Next, for dual-method use, it is shown that the importance of women’s method preference increases and that of men decreases when women’s relative income or education is higher than her partner’s, and when she has more relationship alternatives or lower commitment (Grady et al., 2010). Although we do not have information about our respondents’ preferences, these results are in line with our assumptions based on the relative resource hypothesis. It can be argued that similar, or even stronger, power processes can be expected in case of dual-use as men (have to) take contraceptive responsibility over and above women’s use. In contrast, couples practicing natural family planning or couples in which both partners are sterilized might be subject to alternative dynamics. First, it seems unlikely that our main findings can be generalized to withdrawal and the rhythm method as these are mostly used sporadically, in more casual relationships (Guttmacher Institute, 2008; Vaughan et al., 2008). Second, following research to partners’ disagreement and their fertility behaviour (Bauer and Kneip, 2013; Thomson, 1997), a

possible explanation for dual-sterilization for contraceptive reasons is that disagreement mostly tends to lead couples to a compromise, rather than to a veto-solution in which one partner imposes his/her will. In this way, both partners undergoing a sterilization procedure might be interpreted as the result of such an agreement.

To conclude, it is clear that the overall majority of couples who practice contraception rely on female reversible methods. Apart from other advantages, these are more reliable than male reversible methods. However, some interesting processes that follow a similar logic as partners' bargaining for housework or other household decisions seem to be at play when couples decide to rely on other methods, so the theoretical framework developed around the gendered division of labour proved to be fruitful to analyse these associations (Bertotti, 2013; Fennell, 2011). Interaction and negotiation dynamics between partners become increasingly important as the gap in Western European partners' education narrows. Future research would benefit from adopting a couple perspective when examining contraceptive decision-making dynamics.

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Appendix

Table A *Descriptive statistics per country*

	Mean (SD) / Percentage			
	Austria	Belgium	France	Germany
N	1,482	1,284	1,618	1,614
Contraceptive method				
Male reversible	16.5	7.1	5.3	8.1
Female reversible	48.9	54.3	73.5	53.2
Male permanent	9.0	13.4	0.8	5.5
Female permanent	10.0	13.5	8.3	13.2
No method	15.7	11.8	12.1	20.1
Man's education				
Low	7.3	23.9	22.9	5.4
Middle	70.2	39.6	52.3	59.3
High	22.5	36.5	24.8	35.3
Woman's education				
Low	15.9	18.9	24.7	10.2
Middle	69.4	36.4	45.9	68.3
High	14.8	44.7	29.4	21.6
Relative education	-0.16 (0.61)	0.13 (0.72)	0.03 (0.71)	-0.19 (0.60)
Division of housework	-0.88 (0.68)	-0.71 (0.75)	-0.84 (0.73)	-0.58 (0.44)
Decision-making	0.18 (0.33)	0.18 (0.36)	0.31 (0.41)	0.12 (0.22)
Man's age	41.11 (6.08)	43.46 (6.80)	43.69 (6.93)	43.64 (6.40)
Woman's age	38.13 (5.04)	40.81 (5.67)	40.68 (5.42)	40.74 (5.35)
Marital status				
Married	83.8	82.0	81.0	91.4
Cohabiting	16.2	18.0	19.0	8.6
Number of children				
0	7.0	6.5	3.4	8.3
1	18.4	17.3	13.4	25.0
2	51.8	49.1	49.8	46.8
≥ 3	22.9	27.0	33.4	20.0

Note: For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Table B.1 *Descriptive statistics: Comparison between couples with no desire for children (N = 4,924) and couples irrespective of childbearing desire (N = 7,995)*

	Sample no desire for children	Sample irrespective of desire for children	
	Mean (SD) / Percentage	Mean (SD) / Percentage	χ^2 / F
Contraceptive method			40.93***
Male reversible	11.2	11.5	
Female reversible	70.5	65.6	
No method	18.4	22.9	
Man's education			11.31**
Low	14.0	12.8	
Middle	56.2	54.6	
High	29.9	32.6	
Woman's education			29.79***
Low	16.7	15.2	
Middle	55.6	52.6	
High	27.7	32.2	
Relative education	-0.05 (0.67)	-0.03 (0.68)	3.15
Division of housework	-0.76 (0.66)	-0.70 (0.67)	23.56***
Decision-making	0.19 (0.34)	0.18 (0.35)	4.557*
Man's age	42.63 (6.71)	39.93 (7.44)	431.82***
Woman's age	39.68 (5.53)	37.07 (6.41)	562.10***
Marital status			126.35***
Married	83.3	74.9	
Cohabiting	16.7	25.1	
Number of children			337.42***
0	6.5	15.6	
1	19.8	24.7	
2	49.7	41.0	
≥ 3	24.0	18.6	

Note: For relative education, division of housework and decision-making, a negative score indicates higher male power whereas a positive score indicates higher female power.

Table B.2 *Parameter estimates for the multinomial logistic diagonal reference model with control variables, relative education, division of housework and decision-making power, irrespective of childbearing desire (N = 7,995)*

	Male reversible	Female reversible (Ref.)	No method
Saliency parameter			.453
Odds ratios for the homogamous couples with educational level i (probability between brackets)			
μ_{11} (Ref.)	0.235 (9.5%)	1 (40.2%)	1.252 (50.3%)
μ_{22}	0.249 (13.7%)	1 (55.2%)	0.562 (31.1%)*
μ_{33}	0.528 (25.4%)*	1 (48.1%)	0.552 (26.6%)*
Odds ratios for the control variables			
Age man	0.982*		1.027*
Age woman	1.040*		1.059*
Married (Ref.)			
Cohabiting	0.963		0.647*
0 children (Ref.)			
1 child	1.351*		0.702*
2 children	1.263		0.442*
≥ 3 children	1.242		0.531*
Desire for children	1.426*		3.407*
Odds ratios for the power measures			
Relative education	1.015		0.949
Division of housework	1.239*		1.081
Decision-making	0.836		0.832

Note: μ_{11} = both partners are low-educated (Ref.), μ_{22} = both partners are middle-educated, μ_{33} = both partners are high-educated. For age, these specifications resulted in the best model fit. For relative education, division of housework and decision-making, a score below 1 indicates higher male power than averagely whereas a score above 1 indicates higher female power than averagely. Models controlled for country dummies. Ref. = reference category. For low-educated couples (μ_{11}), the probability of being in the category of male reversible contraception is calculated as $\frac{0.235}{0.235+1+1.252} \times 100$. *** $p < .001$; ** $p < .01$; * $p < .05$ (two-tailed tests).