WOMEN'S RELATIVE RESOURCES AND COUPLES' GENDER BALANCE IN FINANCIAL DECISION MAKING

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ABSTRACT

The reversal of the gender gap in education means that a growing proportion of women in Western countries have a higher education and income than their male partners. This can be expected to affect the balance of power within couples. We investigated how the relative education and earnings of husbands and wives are associated with self-reported major financial decision making within the family. From the perspective of relative resources, one would expect that the partner with more resources would have more say in these decisions. However, from the point of view of traditional gender roles, the husband takes the lead in financial decision making, so gender display might counterbalance the partners' relative resources. In order to investigate empirically which mechanism predominates, we used European Union Statistics on Income and Living Conditions 2010 data for 27 European countries (n=72,638). In line with the relative resources perspective, we found that women who earn more than their partner are more likely to report that they alone make the major financial decisions in the family. However, in line with predictions based on traditional gender display, the association with relative earnings is not linear: in cases in which the wife earns almost all of the income, we find that husbands are reported to have more say in financial decision making than among couples in which both contribute a substantial part of the joint income.

Key Words: gender roles, assortative mating, relative earnings, decision-making, family income

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Over the past decades, gender role differentiation has been weakening in most Western societies. The educational attainment, labor market participation, and earnings of men and women have become more similar over time (Buchmann and DiPrete 2006; Goldin 2006; Lutz et al. 2008). An important trend in this context has been the reversal of the gender gap in education: Among most young-adult cohorts in Western countries, women have become more educated than men (Buchmann & DiPrete 2006; Van Bavel et al. 2018). In these countries, couples in which the wife has a higher education than her husband now outnumber couples in which the husband is more highly educated (Esteve et al. 2012; Esteve et al. 2016; De Hauw et al. 2017). More education often implies higher earning potential and, in effect, women's higher relative education has clearly increased the proportion of families in which she is the main income provider (Wang et al. 2013; Vitali and Arpino 2016; Klesment and Van Bavel 2017).

Despite these trends, gender inequality remains strong, particularly in the private family sphere (England 2010; Pedulla and Thébaud 2015). While ideological support for gender equality has increased over the past decades (Brewster and Padavic 2000; Thornton and Young-DeMarco 2001; Davis and Greenstein 2009; Pampel 2011), there is also evidence of a recent stall in the move toward egalitarianism (Cotter et al. 2011; Pedulla and Thébaud 2015), or even a revival of traditional gender ideology within the sphere of family life (Pepin and Cotter 2017).

Consequently, it remains to be seen how rising gender equality in education and the labor market is affecting power relations between men and women in the realm of intimate relationships. Both structural and ideological factors are likely to play a role. From a structural point of view, both the micro-economic perspective (Becker 1993) and the marital power perspective (Blood and Wolfe 1960) highlight the role of relative resources, including differences in human capital between partners. Many studies have found that more equal resources are associated with more equal relationships in the home (see reviews in Coltrane

2000; Sullivan 2011). However, critics have argued that the distribution of resources is unable to explain persistent gender inequalities. Gender ideology matters as well: women's higher earnings do not seem to buy them an equal position in the domestic sphere because of the persisting norms and attitudes that maintain traditional gender roles in the family (England 2010; Tichenor 2005a). Gender display may overrule relative resources (Bittman et al. 2003), i.e., when men or women, or both, continue "doing gender" (West and Zimmermann 1981) – acting out traditional gender roles – even when the resources have become more equal or even reversed in favor of women.

Earlier studies of gender inequality in the family sphere have mostly looked at the sharing of housework and childcare. This paper examines another dimension of gender equality within couples, namely, the balance of power in financial decision making. Equality in decision making is argued to be one of the most important pillars supporting fairness in partnerships (Rosenbluth et al. 1998). In this paper we investigate how women's relative education and earnings, compared with their male partner's, determine who makes important financial decisions for the family. We focus on decisions to spend significant sums of money on consumer durables, to borrow money, or spend savings. We call these three items "major outlay decisions." Such decisions are made less frequently than decisions about everyday spending or management of the household. They are rarely part of the daily routine, and are therefore an aspect that differentiates our scope of analysis from the more common housework and childcare research.

Our analysis covers 27 European countries and is based on the 2010 ad-hoc module of European Union Statistics on Income and Living Conditions. In this survey, respondents were asked to give their subjective opinion of how certain types of decisions are made in the household. We used this information to calculate a summary score for financial decision making

and then to model the probability that either the woman or the man would be more likely to be reported as the decision maker, compared with a more balanced decision-making process.

Our results support the notion that women in non-traditional unions, i.e., who are more educated than their partner and/or who earn a larger share of the couple's income, tend to have more influence over major outlay decisions in the household, compared with women in traditional types of unions. However, in line with predictions based on traditional gender display, the association with relative earnings is not linear: among couples in which wives earn almost all of the income, we find that husbands are reported to have more say in financial decision making than among couples in which both contribute a substantial part of the joint income.

LITERATURE REVIEW

In this section the theoretical perspectives as well as earlier studies that are relevant to the connection between relative resources and financial decision making among couples are reviewed, and hypotheses to be tested in the European context deduced.

Relative Earnings and Women's Decision Making

From the perspective of relative resources, differences in individual resources such as income can explain the gender differentials in power and decision making in the family (Blood and Wolfe 1960; Blumberg and Coleman 1989; Steil and Weltman 1991). In the past, married women generally had less education than their husbands. Human Capital Theory holds that this supported a gendered division of labor within the couple (Becker 1993). Since the husband focused on work in the labor market and was usually the main monetary contributor to the family budget, he was typically regarded as the "head of household," i.e., the person who "had more say" about critical household decisions. The wife was more involved in day-to-day

spending in the domestic sphere while the breadwinning husband made the decisions about larger expenditures (Edgell 1980; Nyman 1999). Although typical of traditional male-breadwinner families, this pattern of decision making has been observed among contemporary dual-earner couples as well (Bartley et al. 2005). Researchers have reported that women who earn more than their husband are more likely to be in charge of certain household management decisions (Treas and Tai 2012). This would be even more applicable when one spouse depends entirely on the other for the household income. The dependent spouse is expected to do more housework in exchange for economic resources from the breadwinning partner (Brines 1994; Greenstein 2000). Thus, from the perspective of relative resources, our basic expectation is that the partner with a higher income would be more likely to make the major outlay decisions, irrespective of gender. We formulate our first hypothesis about the role of relative earnings accordingly:

> *Hypothesis 1*: Higher relative earnings of a spouse are positively associated with making decisions about major outlays, and the higher the relative earnings, the greater the likelihood of being the principal decision maker.

Female Breadwinners and Gender Display

Resource Theory is gender-neutral in the sense that it assumes that the effect of relative earnings applies equally to women and men. However, earlier research has found that in households in which the woman earned a larger part of the couple's income, the spouses often did not switch roles as the theory would predict (Atkinson and Boles 1984). For example, some studies of the distribution of housework have indicated that the relationship between the partners' relative income and their share of the housework is not linear; men are *not* doing more housework as

their female partners earn an increasing proportion of the joint income. Even when men become financially dependent on their wives, they do not necessarily adopt the role of dependent spouse as would be predicted by Resource Theory (Brines 1994; Greenstein 2000; Bittman et al. 2003).

The latter findings may be explained by gender norms and gender display (Greenstein 1996). Deviation from traditional gender norms may result in attempts to compensate for this deviation in other dimensions. For example, wives who earn more than their husband might increase their efforts to perform traditionally female tasks, such as housework, in order to appear less deviant from the male-breadwinner model. This mode of "doing gender" (West and Zimmermann 1987) has been called "gender display" (Brines 1994), or "gender-deviance neutralization" (Atkinson and Boles 1984; Greenstein 2000). Support for this theory has come from quantitative research that found a curvilinear rather than linear relationship between women's relative income and the sharing of housework (Aassve et al. 2014; Evertsson and Nermo 2004, 2007). However, a number of quantitative studies have suggested that the evidence supporting gender display in housework may be due to either a failure to account for the woman's absolute income (Gupta 2007; Killewald and Gough 2010; Sullivan 2011) or inaccurate statistical modeling (McClintock 2017).

Nevertheless, Tichenor (2005b) found evidence based on qualitative data that women married to an economically dependent husband may try to compensate for this deviance from traditional gender roles by leaving decision making up to their husband. The normative expectations concerning men's and women's roles may be stronger than the implications of relative income (Tichenor 2005b), at least in some social contexts.

Therefore, we expect that the likelihood of wives' making the important financial decisions would not increase monotonically as their relative income increases, but rather that there would be a turning point after which the probability of their being the decision maker

would begin to decline due to the gender display, while the probability of husbands' making the important financial decisions would increase for the same reason. This turning point is not expected to be in the middle of the relative earnings distribution, at which both partners earn more or less equally, but rather at higher levels of relative earnings, at which the wife earns significantly more than her husband. The latter situation is contrary to the norm that the husband should be the main provider, while couples in which both partners contribute approximately the same income are in line with the current dual-earner model (Cherlin 2016; Chesley 2011). Based on the gender ideology argument, our second hypothesis contains two parts, a and b:

> *Hypothesis 2*: The positive relationship between women's relative earnings and their financial decision making is non-linear; the relative earnings of the wife are positively associated with the probability that she rather than her husband would make the decisions about major outlays only up to a certain point: among couples in which the wife earns (almost) all of the couple's income (a) the probability that she would make the major outlay decisions is lower, while (b) the probability that he would mainly make these decisions is higher, compared with couples in which she earns more but the husband also provides a substantial part of the joint income.

Relative and Absolute Level of Education

In addition to relative earnings, relative education is likely to be an important factor associated with the couple's financial decision making. First, education is a key factor in human capital, so the partner with the higher education may be in a stronger bargaining position with regard to financial decisions. Second, an individual's choice of a partner in terms of education may be correlated with egalitarian attitudes. Women with more traditional values may be less inclined to "marry down," as it is contrary to the traditional expectation that women should "marry up"

(Schwartz 2013; Van Bavel et al. 2018). Conversely, men who choose an equally or more highly educated female partner may possess a more egalitarian attitude. Accordingly, women who have more education than their partner may have more influence in making major financial decisions, compared with more traditional hypergamic couples.

Third, because of the numerical constraints of the marriage market, some types of educational pairings may be sub-optimal from the perspective of one or both of the partners. More specifically, given the reversal of the gender gap in education, some women may marry down even if they would prefer to have an equally educated partner (Van Bavel et al. 2018). That situation may undermine the harmony and marital satisfaction in such relationships. Partners may not share certain attitudes that are associated with level of education (Blossfeld 2009; Brewster and Padavic 2000; Cotter et al. 2011). Even if marriages in which the wife is more highly educated than her husband no longer have higher divorce rates in the U.S. than in the opposite situation (Schwartz and Han 2014), other marital tensions may emerge. For example, she may take a firmer stance in negotiations about major outlays. In addition, highly educated women who marry down in terms of level of education may be more selective with regard to other qualities, which might include openness to a less traditional division of work and also a more positive attitude toward women's financial decision making.

Based on these considerations, we may expect that women's relative education and financial decision making would be positively correlated, even after adjusting for relative earnings:

> *Hypothesis 3*: The higher a woman's level of education relative to the level of education of her male partner, the more likely it is that she would make the major outlay decisions.

However, a recent study suggests that women who marry down in terms of education are more likely to marry a man with higher relative earnings; this is interpreted as a function of gender display (Qian 2016). When relative resources in terms of education dominate, we would expect Hypothesis 3 as formulated above to hold true. However, an alternative hypothesis is that gender display may also play a role with respect to relative education, so that when a woman has more education than her partner, she compensates by leaving more of the financial decision making to him.

DATA AND ANALYSIS PLAN

We use the 2010 round of European Union Statistics on Income and Living Conditions (EU-SILC). This dataset includes an ad-hoc module on intra-household sharing of resources, targeting households with at least two persons aged 16 and above. In this module, the questions about decision making were asked separately of individuals rather than jointly of couples. They are intended to capture the respondent's subjective point of view.

Both partners were interviewed separately, but there is no guarantee that the responses of one partner did not influence those of the other, so we cannot treat the responses given by male and female partners as independent samples of information about decision making. In order to determine the extent to which the responses of the female and male partners differ, we carried out parallel analyses on both samples separately. In this paper, we focus on the analyses based on women's responses and report those based on the male sample in Part C of the online supplement. Given that both samples produce the same basic patterns, we will discuss the men's results only when they differ in important ways from the women's.

Questions pertaining to decision making were asked only of individuals older than 16 years of age who were living in a household with a partner who was also older than 16

(n=129,797). We eliminated observations in which the partner ID was missing (n=2,062). In order to be able to compute the woman's share of the contribution to the couple's joint earnings, we also had to exclude cases in which neither of the partners had any employment income during the income reference period (n=33,453) or who reported having no household income (n=146). Couples with the level of education missing for either partner were also left out (n=2,442). We then dropped observations in which any of the decision-making questions were not answered (n=4,193). As our focus is on employment income, the study sample is mostly restricted to the population of working age, so we excluded respondents below the age of 20 and over the age of 60. Finally, after preliminary analysis, we chose not to include two countries (Bulgaria and Latvia, n=5,860) because of an extremely large percentage of missing values for the outcome variable (31% and 54% respectively). After these omissions, the analytical sample consisted of 72,638 couples. Table 1 provides the sample sizes and descriptive statistics by country.

Outcome variable

Our dependent variable is based on three questions in the ad-hoc module. These questions concerned which of the partners would be more likely to make decisions regarding a) purchasing expensive consumer durables and furniture (*durables*); b) borrowing money, including mortgages and loans (*borrowing*); and c) using savings (*savings*). The module also contained a question about who makes the everyday shopping decisions (*shopping*) and a question about who is usually in charge of general decision making (*general*). We analyzed all five questions using principal component analysis and found that *durables*, *borrowing*, and *savings* loaded mainly on the first component (loadings 0.49, 0.52, 0.52); *shopping* loaded mainly on the second component (0.95); and *general* decision making loaded moderately on

the first component (0.41), but mainly on the third component (0.9). In this study, we focus on the questions regarding consumer durables, borrowing money, and savings.

When asked about who is likely to make decisions, respondents were given the choices "more likely me," "balanced," and "more likely my partner." They could also say that they had never had to make a particular decision (for instance, the couple did not have any savings or had never considered borrowing money). In order to combine the three questions into a single score, we first converted the answers to each question into numeric values, with 0 representing a balanced outcome, and –1 and +1 indicating respectively that the female or male partner is reported to be the decision maker. If a particular decision had never been made by the couple, we coded the answer as missing. The numeric values of the three questions were then added up, creating a total score of –3 to +3. In order to avoid basing the score on a single question, we decided that at least two of the three questions could not be missing. Thus, if a respondent had answered only one or none of the three questions, the score variable was coded as missing (5.1% of all observations, n=3,702).

A high proportion of women said that the decision making was balanced, resulting in a total score of zero for our outcome variable for over three quarters of our sample (Table 2: 75.5% of the study sample). This reflects at least to some extent the survey guidelines, which stated explicitly that if certain decisions were sometimes made by the other partner, the respondent should choose "balanced." This implies that on average there is a bias toward "balanced" because respondents were encouraged to choose this category if they had doubts. As a result, classification according to the two remaining categories (in which either the man or the woman is reported to be the sole decision maker) becomes more stringent.

Values below zero indicate that the female partner was the main decision maker; these values constituted 9.2% of the analytical sample. Men as the principal decision-makers (scores

above zero) comprised 10.2% of the sample. In the analysis, we distinguish between cases in which decisions were more often made mainly by the female partner (the total score is negative), by the male partner (positive score), or whether the decision making was balanced (the total score is zero). Table 2 shows how single questions and the dependent variable derived from the category, which we call "major outlays" or "major outlay decisions," are distributed among the different levels of relative education.

Explanatory and control variables

The two main explanatory variables in this study are the woman's earnings and education, relative to her partner. Relative earnings, ranging from 0 to 100%, denotes the percentage that the woman contributed to the couple's joint gross earnings during the income reference period, which is the year preceding the survey. We consider only earnings from employment and self-employment. Various transfers and benefits that are meant to compensate for the lack of employment income were not included. Although transfers and benefits do differ across countries the effect on the measure of relative earnings is negligible (see also the online supplement in Klesment and Van Bavel 2017). Gross earnings were selected over net earnings because the latter are only available for a limited number of countries in the sample. In this case, using net rather than gross earnings results in minor differences only in the relative measure (Klesment and Van Bavel 2017). Table 1 presents the mean and standard deviation of women's relative earnings in each country.

EU-SILC uses the ISCED-97 scale to index the highest level of education attained (UNESCO 2003); however, the user database combines all levels of tertiary (college or university level) education in one category. In our analysis, we distinguish between three groups: lower (ISCED levels 0–2, up to the second stage of basic education, equivalent to the 7^{th} to 9^{th} grades in the U.S.), medium (ISCED 3–4, secondary or post-secondary but not tertiary

education; up to the 12th grade, vocational, junior and community college education) and higher education (includes ISCED 5–6, university level, Bachelors, Masters and PhD degrees). Using these wider categories ensures that the grouping captures the major differences in educational attainment in the European context.

Our relative education variable is based on the level of education of both partners, as described above, and categorizes each couple's educational status as homogamous (both partners equally educated), hypergamous (the man is more educated), or hypogamous (the woman is more educated). As shown in Table 1, homogamous couples constitute the majority in all countries. However, if the partners are not equally educated, it is more often the woman who is more educated than the man. In 21 out of 27 countries, the proportion of hypogamous couples equals or exceeds the proportion of hypergamous couples, which is in line with recent findings about the reversal of the gender gap in education (Grow and Van Bavel 2015; Esteve et al. 2017; De Hauw et al. 2017).

In the regression analyses, we control for a number of individual- and couple-level characteristics. "Household finances" indicates the couple's income-pooling practices, as reported by the respondent. It was included because earlier studies revealed that it is related to different decision-making patterns (Pahl 1995; Vogler et al. 2008). Our data allow three situations to be distinguished: a) all income is treated as common; b) some income is treated as common and the rest is kept private; c) all income is treated as private. The question concerning income pooling was not answered in approximately one percent of cases, and these observations were coded as missing with regard to the household finances variable.

Table 1**.** Sample size and distribution† of women's relative education, relative earnings, and the major outlay variable, by country

		Women's relative education			Relative earnings		Major outlays			
	N	Lower	Equal	Higher	Mean	SD	Woman	Balanced	Man	NA
Austria	2,202	28	60	12	34	29	7	78	13	2
Belgium	993	21	55	*24	39	30	*11	79	9	1
Cyprus	1,891	14	62	*24	32	26	6	77	12	5
Czech Rep.	3,693	15	75	10	34	27	6	82	7	5
Denmark	1,306	16	59	*25	43	23	6	82	8	4
Estonia	2,218	12	60	*28	40	30	*6	81	4	9
Finland	2,374	14	57	*29	43	27	9	70	16	5
France	3,938	19	55	*26	40	28	*15	67	12	6
Germany	4,846	28	59	13	33	30	5	79	10	6
Greece	2,786	17	64	*19	32	32	10	63	13	14
Hungary	4,062	16	67	*17	40	31	*4	87	3	6
Ireland	1,026	13	59	*28	*52	31	*26	57	15	2
Iceland	705	21	50	*29	37	22	16	64	20	0
Italy	7,487	17	59	*24	30	30	7	72	17	4
Lithuania	2,118	10	64	*26	45	33	*10	76	6	8
Luxembourg	2,438	20	63	17	33	29	*16	65	16	3
Malta	1,501	21	65	14	21	27	*7	86	5	2
Netherlands	2,324	23	54	*23	32	25	7	78	13	2
Norway	1,088	19	56	*25	38	23	7	82	9	2
Poland	5,495	9	75	*16	33	32	*6	77	6	11
Portugal	1,923	8	73	*19	38	29	*8	79	8	5
Romania	2,760	17	75	8	32	30	7	79	8	6
Slovakia	2,814	12	76	*12	39	27	*17	69	12	2
Slovenia	2,041	17	59	*24	44	29	*6	79	6	9
Spain	5,487	18	59	*23	36	31	*11	83	5	1
Sweden	1,082	14	56	*30	40	24	*15	70	12	3
UK	2,040	15	62	*23	37	29	18	54	24	4

Source: EU-SILC 2010, authors' own calculations, sampling weights applied to the calculation of distributions.
Note: Relative education is based on the 3-level educational attainment variable. Relative earnings is the average percentage that women contribute to the couple's earnings. The asterisk denotes that the women's percentage in the variable is equal to or higher than the men's respective value.
† The numbers for "relative education" and "major outlays" are row percentages.

Marital status distinguishes between those who are currently married, never married, or previously married (divorced or widowed). Given that we only include women who are living with a male partner, the latter two status categories imply unmarried cohabitation. We also include a control for how long the woman has been living with her current partner. Next, since previous research has shown that gender roles tend to become more traditional after having children, with women spending more time on childcare and housework (Sanchez and Thomson

1997), in our preliminary analyses we controlled for whether there were children living in the household. However, this variable did not affect our results so we did not include it in the analyses presented here.

Other controls include the woman's age, partner's unemployment, and a measure of the couple's total income. It has been found that the proportion of female breadwinners is generally higher among low-income families (Winslow-Bowe 2006; Vitali and Arpino 2016; Klesment and Van Bavel 2017). Because there is a large variation in income across countries, the absolute level of family income is included as a country-specific quartile of the couple's joint earnings. Unemployment of the male partner directly affects the couple's relative earnings. We control for the number of months the man was not employed during the income reference period.

Methods

We used multinomial logistic regression to model the probability that either the woman or the man would be more likely to be reported as the main financial decision maker as opposed to balanced decision making by both partners (the modal outcome). Observations with missing values for the dependent variable were omitted. In order to ensure that missing values for the dependent variable are random with respect to our main explanatory variables, we tested the correlation using a binary logistic regression model (included in Part B of the online supplement). Neither women's relative earnings nor educational pairing were statistically significant predictors of missing values in the dependent variable.

Our models include fixed effects to account for the cross-country variability in decision-making patterns. Standard errors were estimated to be robust for the country-level clustering of respondents (Rogers 1993). Sampling weights were applied as recommended in the data documentation (Eurostat 2010). In order to ensure that the multinomial regression satisfies the

assumption of the independence of irrelevant alternatives (Hausman and McFadden 1984), the models were checked using the Hausman test in Stata 15. No systematic differences were found in the models in which one of the outcome categories was omitted.

We tested Hypotheses 1–3 by estimating the association between the likelihood of either partner's decision making and the woman's relative earnings and education. Bearing in mind that the association between decision making and relative earnings may differ across the categories of relative education, we included interaction effects between the two variables. The woman's relative earnings were entered in the regression model as a six-category factor (0-10%, 11-25%, 26-50%, 51-75%, 76-90% or 91-100% of the joint income) in order to allow non-linear relationships with the dependent variables without any pre-specified functional form.

We also tested other specifications of our dependent variable as alternatives to the three-category version used below, including linear regression of the continuous total score for decision making (Part D of the online supplement). We also tried binary logistic regression to estimate the odds that decisions are more likely to be made by the woman (i.e., the score is below zero). The results of these alternative specifications are consistent with the findings discussed below.

RESULTS

Table 2 presents decision making according to relative education. The upper three blocks show row-wise percentages of responses to each question included in the construction of our dependent variable. The lower block gives the percentages for the summary dependent variable, "major outlays." For all three constituent questions, respondents most often reported that decision making was balanced in their household. An examination of the differences between decision making by either the woman or the man reveals that in hypogamous unions the

proportion of women's decision making exceeds that of men's, except for the question concerning borrowing money. In homogamous unions, the proportion of couples in which the woman makes the decisions about consumer durables is also higher than that in which the man makes such decisions. Men are more likely to be reported as the principal decision maker in hypergamous unions. After aggregating all three questions into the three-level "major outlays" variable, women's proportion of decision making is higher in hypogamous unions, whereas men are more often reported to be the decision maker among homogamous and hypergamous couples.

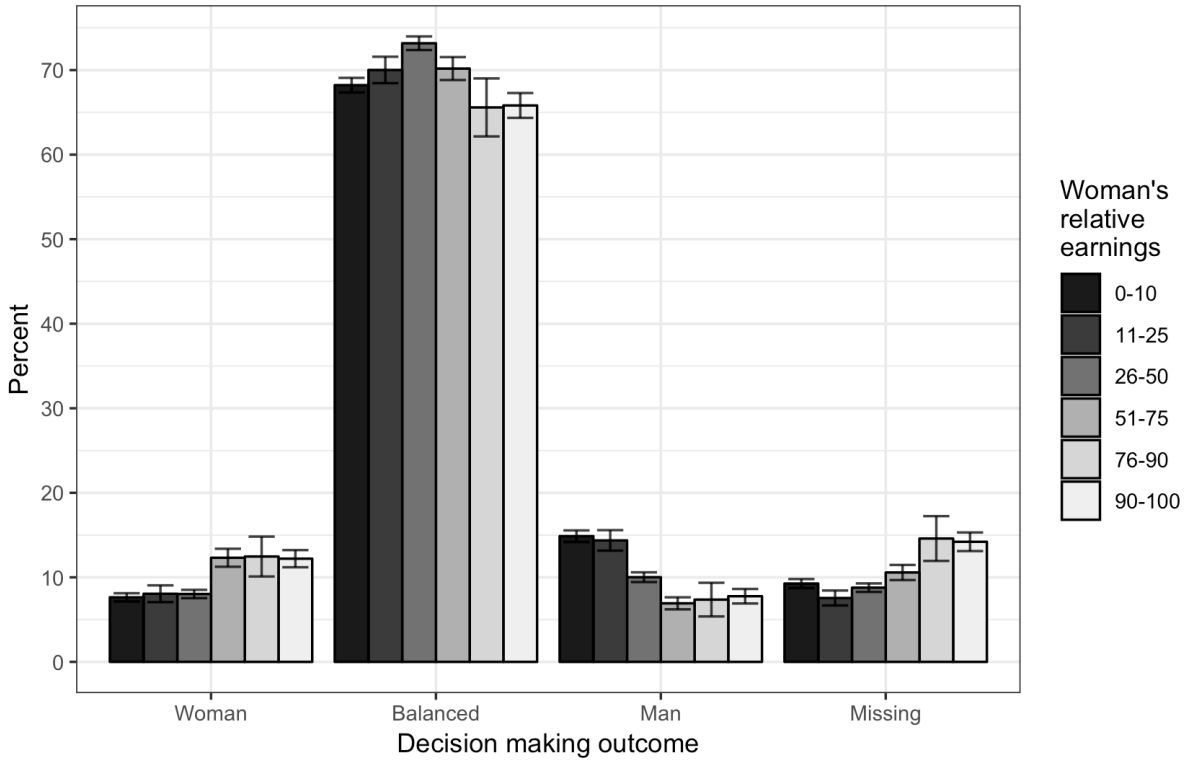
Table 2**.** Distribution of responses to each question in our dependent variable, as well as the combined dependent variable (major outlays); row-wise percentages within educational pairing categories

Relative education	Woman	Man	Balanced	Missing	Total
		Durables			
Homogamy	7.9	6.0	84.6	1.5	100
Hypogamy	10.5	5.6	82.6	1.3	100
Hypergamy	6.3	7.0	85.2	1.5	100
		Borrowing			
Homogamy	3.9	8.6	73.1	14.3	100
Hypogamy	6.0	6.6	75.0	12.4	100
Hypergamy	2.4	11.2	72.1	14.4	100
		Savings			
Homogamy	4.6	5.0	74.5	15.9	100
Hypogamy	6.2	3.7	72.9	17.3	100
Hypergamy	3.4	6.6	75.4	14.5	100
		Major outlays (dependent variable)			
Homogamy	9.0	11.4	74.1	5.5	100
Hypogamy	12.7	9.2	73.1	5.0	100
Hypergamy	6.9	14.2	73.6	5.3	100

Source: EU-SILC 2010, sampling weights applied, authors' own calculations.

We then show how the dependent variable is distributed among the different levels of relative earnings. We categorized the latter into six groups and calculated the proportions of the outcomes of the dependent variable for each group. Figure 1 clearly shows that across different levels of relative earnings, balanced decision making is more common among dual-earner couples in which the woman earns a considerable share of the joint income but not more than the man (26–50% of joint earnings). The proportion in the balanced decision-making group is lower among women who earn less than 25% of the total income, as well as among those who earn more than their male partner. Decision making mainly by the woman or by the man exhibits a clear gradient across relative earnings as well: a propensity for the woman to be the principal decision maker is reported when the woman earns more than her partner. This result is consistent with Hypothesis 1 concerning the association between relative earnings and decision making. Men are more often reported to be the main financial decision maker when women earn less than a quarter of the joint earnings. When women earn at least a quarter of the joint earnings, the likelihood of men's being the sole decision maker drops considerably.

Figure 1. Distribution of the major outlays variable by the woman's relative earnings



Source: EU-SILC 2010, authors' own calculations, sampling weights
Note: Vertical lines indicate 95% confidence intervals of point estimates

Regression results: relative earnings and education

Table 3 shows the results of our multinomial regression model, using balanced decision making (hereinafter, "Balanced") as the reference category. The coefficients represent the association of the explanatory variables with decision making primarily by the wife ("Woman") or by the husband ("Man"). Relative earnings are included as an explanatory variable (using the same six categories as in Figure 1); couples in which the woman earns 26–50% of the joint income constitute the reference category. Coefficients in the left column of the table can be interpreted as relative log-odds (or relative probabilities, when exponentiated) of "Woman." For example, if she earns 0-10% of the joint income, the log-odds of "Woman" over "Balanced" are greater by 0.137, compared with the situation in which she earns 26-50%. The relative log-odds of

"Woman" are 0.413 if she earns 51-75%, 0.435 if she earns 76-90%, and 0.386 if she earns 91-100% of the joint income. Because these are log-odds of "Woman" relative to "Balanced," and there is also a third outcome category, we cannot simply associate positive coefficients with a higher overall probability of the outcome. For a more complete picture of how the outcomes "Woman" and "Man" are shaped by the relative earnings variable, we computed predictive margins (probabilities of each outcome) and average marginal effects (discrete change from the base level) of the relative earnings variable.

Table 3. Multinomial regression of major outlay decision making, coefficients and standard errors

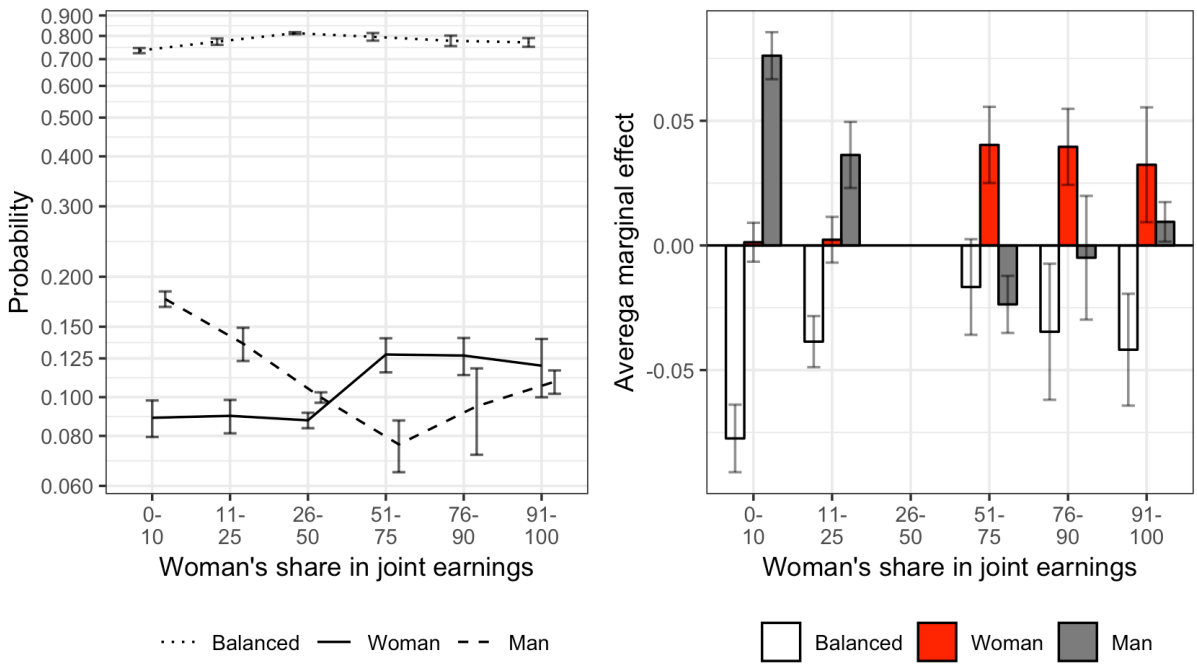
	Main financial decision maker			
	Woman		Man	
	Coef.	*SE*	*Coef.*	*SE*
Relative earnings % (ref=26–50)				
0–10	0.137*	(0.055)	0.706***	(0.044)
11–25	0.086	(0.054)	0.378***	(0.058)
51–75	0.413***	(0.082)	–0.250**	(0.087)
76–90	0.435***	(0.080)	0.001	(0.155)
91–100	0.386**	(0.123)	0.158***	(0.044)
Woman's relative education (ref=Homogamy)				
Hypogamy	0.353***	(0.072)	–0.210***	(0.058)
Hypergamy	–0.360***	(0.101)	0.118	(0.075)
Woman's level of education (ref=Medium)				
Low	0.237**	(0.082)	0.102*	(0.045)
High	–0.323***	(0.068)	–0.026	(0.043)
Household finances (ref=All common)				
Some common	0.363***	(0.058)	0.485***	(0.045)
All separate	0.568***	(0.063)	0.606***	(0.053)
Missing answer	–0.074	(0.111)	0.446***	(0.055)
Woman's marital status (ref=Married)				
Never married	0.261**	(0.082)	–0.038	(0.103)
Separated, widowed	0.408*	(0.201)	–0.094	(0.188)
Joint earnings quartile (ref=2)				
1	–0.020	(0.112)	–0.006	(0.042)
3	–0.006	(0.042)	0.049	(0.035)
4	0.013	(0.080)	0.309***	(0.074)
Length of cohabitation in years	–0.003	(0.004)	–0.014**	(0.004)
Man's unemployment in months	0.024**	(0.007)	–0.029**	(0.011)
Constant	–2.785***	(0.075)	–2.179***	(0.078)

Source: EU-SILC 2010, authors' own estimates
Note: Country dummy variables and woman's age omitted from the table. Sampling weights and country-clustered robust standard errors applied.
*p < 0.05 **p < 0.01 ***p < 0.001.

Predictive margins, displayed in the left panel of Figure 2, show that the probability of the woman's being the principal financial decision maker is less than 0.1 if she earns less than half of the joint income, but it increases to 0.125 if she earns more than her male partner. Average marginal effects, shown in the right panel of Figure 2, indicate that relative earnings categories 51-75%, 76-90%, and 91-100% have a positive and statistically significant effect on the probability of the woman's being the principal financial decision maker. In other words, when she earns more than half of the joint income, the probability increases by about 3-4

percentage points relative to the reference category 26-50%. Categories 0-10% and 11-25% do not have a significant effect on the probability of "Woman" relative to the 26-50% category. The probability of "Man" is negatively related to the woman's relative earnings, at least if she earns up to 75% of income. Beyond that, the association reverses and the probability of "Man" becomes positively associated with relative earnings. Consequently, Hypothesis 1 is supported: higher relative earnings do increase the probability of being the main decision-maker. This holds both for women and men, with the exception that for men the association reverses if women earn over 75% of the joint income.

Figure 2. Predictive margins and average marginal effects of relative earnings



Source: Table 3, authors' own estimates.
Note: Y-scale of predicted probability log10-transformed. Average marginal effects pertain to the reference category 26-50%. Vertical lines indicate a 95% confidence interval for the predictions.

Hypothesis 2 posits that gender display would reduce the probability of "Woman" when she earns all or almost all of the joint income, and would increase the probability of "Man." In Table 3, the coefficients of the relative earnings variable for "Woman" are highest when she

earns 76-90% (0.435***). The coefficient is smaller when she earns 91-100% of the joint income (0.386**). As these coefficients are relative log-odds, this does not necessarily imply that the woman is less likely to be the main decision maker in the latter case. In order to determine that, we need to examine the predictive margins, plotted on the left side of Figure 2. These indicate a small decrease in the probability of "Woman" among the 76-90 and 91-100 categories, but the confidence intervals are too large for this decrease to be statistically significant. The difference in marginal effects between the woman's earning 76-90% and 91-100% of the joint income is small and within the confidence intervals, as seen in the right panel of Figure 2.[2] Therefore, these results do not support Part (a) of Hypothesis 2: There is insufficient evidence that gender display plays a role in determining the likelihood that the woman would be the family's principal financial decision maker.

Furthermore, according to the gender-display argument and contrary to expectations based solely on relative resources, Part (b) of Hypothesis 2 predicted that the male partner would more often be the principal decision maker when the woman earns (almost) all of the income. Our data support Part (b). In Table 3, the coefficient for the relative earnings category 91-100% is 0.158*** for "Man" as compared with "Balanced". This implies a 17% higher probability of "Man" relative to "Balanced" if the woman earns 91-100% of the joint income instead of 26-50%. Clearly, this relative probability would be even greater for the reference category (51-75%), because the overall probability of the outcome "Man" is predicted to be lowest for the 51-75% category (Figure 2, left panel). The marginal effects of relative earnings (Figure 2, right panel) confirm the presence of gender display in decision making as reported by men. For the outcome "Man," the marginal effect of 51-75% is negative and statistically

[2] In order to test the difference formally, we re-estimated the model in Table 3 by changing the reference category of the relative earnings variable to 91-100% (model not shown here). The predicted average marginal effects (not shown) confirmed that neither Categories 51-75% nor 76-90% are associated with a statistically significant higher probability of "Woman" as compared with the 91-100% category.

significant, while the marginal effect of 91-100% is positive and also statistically significant. It is important to note that these results are based on the sample of female respondents. Similar results are obtained if we use the male sample, although the relative probability of "Man" at the highest category of relative earnings is smaller for the male sample.[3]

Thus far, we have established that relative earnings are positively associated with the probability that major outlay decisions are reported to be made by women. Hypothesis 3 also posited that the relative education of the woman may increase this probability. The results shown in Table 3 indicate that educational hypogamy is associated with higher relative log-odds for "Woman" than those for "Balanced" (0.353***), as compared with homogamous unions. In contrast, hypergamy has the opposite effect: the relative log-odds of the same outcome are smaller (-0.360***). In order to show the effects of hypogamy and hypergamy on each outcome, we estimated the marginal effects of relative education, as displayed in Table 4. Compared with homogamy, hypogamy increases the probability of "Woman" by 3.7 percentage points, and hypergamy reduces this probability by 2.8 percentage points. These findings support Hypothesis 3.

[3] For the male sample, the marginal effect of the 91-100% category is not statistically different from the 26-50% base category, while the marginal effects of the 51-75% and 76-90% categories significantly reduce the probability of "Man." The complete results based on the male sample are provided in Part C of the online supplement.

Table 4. Average marginal effects (dy/dx) of relative education

		dy/dx	SE	p	Lower 95% CI	Upper 95% CI
Outcome	Relative education					
Balanced						
	Hypogamy	–0.013	0.005	0.019	–0.023	–0.002
	Hypergamy	0.011	0.009	0.231	–0.007	0.028
Woman						
	Hypogamy	0.037	0.008	0.000	0.021	0.053
	Hypergamy	–0.028	0.006	0.000	–0.040	–0.015
Man						
	Hypogamy	–0.025	0.006	0.000	–0.036	–0.013
	Hypergamy	0.017	0.008	0.045	0.0004	0.033

Source: Model in Table 3, authors' own estimates.
Note: The reference category is Homogamy.

We have up until this point evaluated our hypotheses concerning the effects of relative earnings using a model that does not allow any interplay between relative earnings and relative education. However, it is possible that relative earnings could have a different association with decision making among different educational pairings. In order to test this, we extended the model in Table 3 by adding interaction terms between relative earnings and relative education (the results are described in Part A of the online supplement). The results still support Hypothesis 1, but the association between relative earnings and the probability of female decision making is weaker for hypergamous unions. We still find support for Part (b) of Hypothesis 2, but only among homogamous and hypogamous couples. Overall, the additional tests that include interactions suggest that the effect of gender display on decision making may be more pronounced among hypogamous than among other types of couples.

Control variables

The models in Tables 3 and 5 controlled for various characteristics of individuals and couples. The parameter estimates for these variables are generally in line with earlier findings as reported in the literature. The coefficients for the income-pooling variable are all positive for the

categories of partial pooling and no income pooling, both for “Woman” and “Man.” This can be broadly interpreted as an indication that balanced decision making is more likely among couples that pool all of their income, as compared with couples that partially pool their income or keep it separate. Being married implies a higher likelihood of balanced decision making, while women in non-marital cohabitation have a higher probability of making the decisions as compared with balanced decision making. With regard to absolute earnings, measured by joint earnings quartiles, the outcome “Man” is more likely than “Balanced” if the couple is in the highest quartile compared with couples in the second quartile. A higher income thus tips the balance in favor of male decision making. The length of the partnership, however, has the opposite effect: the relative probability of the outcome “Man” is reduced as the length of the partnership increases. The husband’s number of months of unemployment is associated with a higher probability of the outcome “Woman” and with a lower probability of “Man,” as compared with the “Balanced” reference category.

CONCLUSIONS

The motivation for this study came from two major features of contemporary Western societies. The first feature is the reversal of the gender gap in education, which may in a broad sense be considered a factor for changing the economic calculus within the family. This new phenomenon is likely to increase women’s relative resources within the family and lead to a growing number of couples in which the woman is more educated than the man, and may also earn a higher income. The second feature is the unevenness of the gender revolution: Whereas a great deal of progress has been made toward gender equality in the public sphere, it has lagged behind in the private sphere. Nevertheless, shifting patterns of assortative mating have improved women’s resources relative to their male partner’s in the context of the family, and

this may now become a factor promoting increased gender equality in that domain as well. In order to gain more insight into the role of relative education and earnings, we analyzed how they are associated with the balance of decision making in the couple, which is an important aspect of equality in the family (Rosenbluth et al. 1998; Kirchler et al. 2001).

Our analysis is based on subjective reports of the balance of decision making among couples. We focused on decisions about major outlays – decisions that are likely to happen less often, but generally require careful consideration. Our primary interest was whether women's higher relative earnings and education would increase the probability that she would be in charge of such decision making. From the perspective of relative resources, we hypothesized that women's earnings would be positively associated with the probability that she would be reported as the household decision maker. The results of multinomial regression modeling suggest that this is indeed the case. The woman's relative earnings are positively associated with the probability that she would be reported to be the decision maker.

Our second hypothesis was that norms and attitudes about gender roles would distort the association between relative earnings and decision making. In the literature, a non-linear relationship is often found between women's earnings and a particular gender equality indicator. For example, the wife of a financially dependent husband might increase her involvement in traditionally female tasks in order to reduce the deviance from traditional gender norms. We applied this concept of gender display to decision making. Specifically, we hypothesized that if the woman earned all or almost all of the couple's income, this would either a) reduce the probability that she would be reported to be the decision maker, or b) increase the probability that the man would be reported to be. The second part of this hypothesis was formally supported, but a non-linear pattern was found concerning the reduction in women's decision making.

Our results indicate that when the man is financially dependent on the woman, the likelihood of his being reported to be the decision maker is higher, as compared with men who are less financially dependent on women. These results lend support to the argument that non-traditional couples tend to maintain traditional gender roles. Tichenor (2005a) theorized that women in non-traditional couples leave decision making to the men in order to portray their family as more traditional than it actually is. Our findings are consistent with this view.

We also hypothesized that the relative education of the woman would have a positive association with her making the decisions. The findings indicate that the higher relative education of the woman increases the odds that she would make the major outlay decisions. Moreover, extending our model with the interaction effects between relative earnings and relative education, we found the strongest support for our gender display hypothesis among hypogamous couples. Perhaps it is the double disadvantage of the husband in such couples, both in terms of earnings and education, that fosters the neutralization of deviance.

Our findings suggest that both relative education and the woman's relative earnings may have important implications for the decision-making balance in the family. Ultimately, such associations may influence other aspects of the household's functioning. It is more likely that women who are in charge of decision making would spend more money on the children (Lundberg, Pollak and Wales 1997). Controlling major expenditures may also increase women's control over the family in general. It is therefore possible that a higher probability of decision making with regard to important financial issues would give women more influence over other, non-monetary family decisions, such as when and where to move, how to spend family time, and how many children to have. Therefore, an increase in hypogamous marriages and female breadwinning may alter spending and consumption patterns, and also have an effect on childbearing intentions and, consequently, on fertility (Van Bavel 2012).

A topic that we were not able to address in the present study is the variability in patterns of household decision making across countries. Studies have shown that cultural background may play an important role in this aspect of family life. For example, in more conservative welfare regimes, housework is more often assumed to be the woman's responsibility (Fuwa 2004; Geist 2005; Knudsen and Wærness 2008). Couples' money management practices differ from one country to another (Yodanis and Lauer 2007), which may have implications for patterns of financial decision making. Earlier studies have also pointed out that cultural norms influence the ways in which income affects decision making in the family (Rodman 1967; Cooney et al. 1982). Considering that comparisons of gender equality across national contexts have merited considerable scholarly attention, cross-country variability in decision making and how it correlates with egalitarian attitudes could be a fruitful topic of future research.

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