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Are Women in Hypogamous Unions More Depressed? A Cross-National Comparison among the Highly Educated

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Abstract

Owing to educational expansion, women are now increasingly over-represented in higher education. Faced with diminished opportunities to homogamously match, a rising number of women opt for lower educated partners (female hypogamy). Up to now, patterns of women's mental health across educational sorting configurations have remained largely undocumented. Compared to those in homogamous couples, hypogamous women may be more vulnerable to stress and poor mental health given a presumably stronger double burden, lower partnership quality, or greater financial strain. In this study, we explore whether hypogamy is linked to greater levels of depression among highly educated women. We also examine contextual variation by looking at the effect of three dimensions of gender regimes: women's educational advantage, family-related social spending, and gender pay gap. The study investigates women's depression in 69 country-period clusters across 27 countries ($N = 9,659$) via a series of multilevel linear regression models drawing on data from three rounds of the European Social Survey (2006, 2012, and 2014). Results confirmed that women in hypogamous unions were more depressed than those in homogamous couples, largely due to greater economic insecurity. We also found that the mental health disadvantage of hypogamous women, especially when married, faded in contexts that institutionally and economically promoted gender equality and female empowerment.

Introduction

In recent decades, depression has been increasingly examined as a consequence of family events and interdependencies (e.g. Lamb, Lee and DeMaris, 2003; Kalmijn, 2016; Glauber and Day, 2018). In addition to being an illness with grave consequences, depression is also an expression of social inequality given the uneven distribution of stressors across the population (Turney and Sugie, 2021). Extensive multidisciplinary studies

revealed a consistent gender gap in depression (Van de Velde, Bracke and Levecque, 2010; Kuehner, 2017). Though a plurality of reasons have been put forward to explain the greater prevalence of depression among women (Roxburgh, 2009; Marchand *et al.*, 2016), there is still much left unexplored, particularly patterns of female depression in connection to family life. A significant determinant of mental health is partnership status, with both marriage and cohabitation known to improve

psychological well-being (Horwitz, White and Howell-White, 1996; Blekesaune, 2018). The current landscape of committed relationships, however, is rapidly changing (Sassler and Lichter, 2020), and so may also be the link between health and partnerships¹ (Carr and Springer, 2010).

A significant demographic shift taking place in recent years is the decline in traditional unions where men hold the educational advantage (female hypergamy), and the rise in marriages where the wife is more educated than the husband (female hypogamy) (Esteve, García-Román and Permanyer, 2012; Esteve *et al.*, 2016; Van Bavel, Schwartz and Esteve, 2018). With the expansion of (female) education, women outnumber men in higher education in recent cohorts across most of the Western world (Schofer and Meyer, 2005; DiPrete and Buchmann, 2013). Faced with fewer opportunities to homogamously match, well-educated women increasingly opt for less educated partners. In the past, research showed that women partnering down had worse physical health than women in homogamous unions (Monden, 2007), but the way that women's mental health varies across partnership configurations is yet to be explored. We note that despite advances in female employment and earning power, women still overwhelmingly shoulder family responsibilities (Geist and Ruppner, 2018), especially in contexts of a stalled gender revolution (England, 2010; Goldscheider, Bernhardt and Lappegård, 2015). Compared to other women, however, given longer work hours, potential over-compensation for often earning a greater share of the household income (Klesment and Van Bavel, 2017; Van Bavel and Klesment, 2017; Qian, 2018), and the overall disruption of gendered social expectations (Hochschild and Machung, 2003; Jurczyk *et al.*, 2019), hypogamous women likely bear an even heavier double burden of paid and unpaid work. In addition to facing higher work–family conflict, known to engender poor mental health (Grzywacz and Bass, 2003; Bilodeau, Marchand and Demers, 2020), women partnering down may be exposed to greater depression-inducing stress as a result of lower partnership quality (Zhang, Ho and Yip, 2012), or greater financial distress (Van de Velde *et al.*, 2010; González and Vives, 2019).

The effects of educational hypogamy on family life and health may also be contingent on national context (Esteve *et al.*, 2016). Existing literature has indicated that women enjoyed better physical and mental health in more gender progressive environments (Moor and Komter, 2012; Van de Velde *et al.*, 2013; Homan,

2019). We anticipate that certain dimensions of gender regimes (e.g. a greater diffusion of women's educational advantage, more supportive family policies, a lower gender disparity in earnings) may render hypogamous partnerships less mentally straining for women, and therefore reduce the mental health disadvantage of partnering down.

Based on these arguments, and given the current knowledge gaps in the literature, this paper asks the following questions: *Are highly educated women in hypogamous unions more depressed than those in homogamous couples? And to what extent does this depression gap vary along certain dimensions of gender systems?* To provide answers, we investigate the association between educational sorting and women's depression in 69 country-period clusters across 27 countries via a series of multilevel random-slope linear regression models drawing on data from three rounds of the European Social Survey (ESS). The sample is largely comprised of married couples, but given the growing incidence of non-marital cohabitation (Kasearu and Kutsar, 2011), and in line with the analysis of educational sorting patterns in Europe by De Hauw, Grow and Van Bavel (2017) using similar data, we also include cohabiting unions. Owing to different causal pathways linking marital outcomes and depression for men—for instance, male depression influences marital quality and not the other way around as for women (Fincham *et al.*, 1997)—we here exclusively focus on women. We additionally opt to examine hypogamy effects for university-educated women only given that homogamy (i.e. the reference group) could have different implications for women with non-tertiary education: for them, homogamous and hypogamous unions may be linked to comparable levels of social and health-related vulnerability as both configurations involve a male partner without a university degree. Moreover, given educational differences in economic standing (Evertsson *et al.*, 2009), the selective mechanisms that drive women with secondary education towards partnering down may greatly differ compared to those with higher education.

This study is the first to link women's depression to within-couple educational disparity, particularly with reference to the increasingly frequent couples in which women are better educated than men. By drawing on both micro- and macro-level variation, we bridge the burgeoning literature on how the rising female advantage in education is reshaping marriage and family (Schwartz and Han, 2014; Qian, 2017; Van Bavel and Klesment, 2017; Van Bavel *et al.*, 2018) with

scholarship on cross-national variation in women's depression (Van de Velde *et al.*, 2010; Palència *et al.*, 2014). To this end, this study delivers a unique and timely understanding of how depression among highly educated women partnering down (as opposed to having a similarly educated partner) has been evolving across different national contexts.

Theoretical Background

The Role of Educational Assortative Mating

To understand the association between depression and family life, we first adopt insights from family systems theory (Minuchin, 1985), which highlights the link between health and the way family, envisioned as a unit of closely related individuals, is configured. Empirical studies often found health-related interdependencies between parents and children (Beardslee, Gladstone and O'Connor, 2011), but also between partners (e.g. Hammer *et al.*, 2005). The evidence suggested that living with a partner had psychological and mental health benefits (Reneflot and Mamelund, 2012; Uecker, 2012). Nevertheless, relationships can also have deleterious effects on partners' mental health. According to stress process theory (Pearlin *et al.*, 1981, 2005), strain occurring in major life domains, including in marriage, generates long-term stress, which in turn leads to depression. Research has indeed revealed a consistent link between high levels of marital dissatisfaction (Fincham *et al.*, 1997; Whisman, 2001) or conflict (Choi and Marks, 2008), and depression.

The status positions held by members within the family unit represent key determinants of family stress and mental well-being (Turney and Sugie, 2021). The educational (in-)equality between partners for instance matters for health at both the individual- (Huijts, Monden and Kraaykamp, 2010) and household-level (e.g. Monden, 2007; Nilsen *et al.*, 2012). Research has found that partners' educational similarity was beneficial for children's health, beyond absolute levels of education (Rauscher, 2020; Pesando, 2021). But, as earlier noted, we still lack knowledge on the link between educational sorting and women's own mental health. In the past, a small number of empirical studies pointed out the vulnerability of hypogamous women in terms of physical health and substance abuse. One study using Dutch data from 1996 found that women in hypogamous unions were more likely to be in less-than-good health than those in homogamous couples (see Table 8, Monden, 2007). Another study, based on similar data, showed that couples with dyadic gaps in education, including those comprised of highly educated women paired with lower educated men, had a higher risk of excessive alcohol consumption than others (Monden *et al.*, 2003).

In this paper, we expect *hypogamous women to be more depressed than those in homogamous unions* (Hypothesis 1). Women's educational advantage produces a shift in power dynamics that clashes with gendered social norms. The 'doing gender' perspective (West and Zimmerman, 1987, 2009) suggests that, rather than being a personal trait, gender is a rigidly cast role that needs to be performed and re-enacted through constant social interactions. First of all, hypogamy in itself challenges broader male hegemonic norms that assign women to subordinate positions (Connell and Messerschmidt 2005). Second, despite evidence of a hypogamy penalty on the post-marital earnings' growth of highly educated women in Sweden (Dribe and Nystedt, 2013), or that less educated male partners still out-earn female partners in certain contexts (U.S.: Qian, 2017; Sweden: Chudnovskaya and Kashyap, 2020), women partnering down often contribute to household income more than others. Studies using 2007 and 2011 data for several European countries have shown that hypogamous women had greater relative earnings than homogamous women (Van Bavel and Klesment, 2017), and were more likely to earn more than half of the couple's joint earnings (Klesment and Van Bavel, 2017). To atone for deviating from traditional social scripts that dictate how couples should perform the division of labour across gender—paid work assigned to men, domestic labour to women (Becker, 1974)—and to appease any perceived threat to their partners' masculine identity, working women tend to engage in compensatory behaviour (Hochschild and Machung, 2003). This often includes emotional work—Jurczyk *et al.* (2019) showed that breadwinning women overly praised their partner's contributions to the household while minimizing their own—or additional domestic tasks (Van Berkel and De Graaf, 1999; Hochschild and Machung, 2003), resulting in a disproportionate and particularly straining double burden of market and household work (Cramm, Blossfeld and Drobnič, 1998; Osiewalska, 2017). Moreover, compared to university-educated men, those with lower education are more attached to traditional gender roles (Miller and Carlson, 2016; Esping-Andersen, 2018) and invest less in domestic work (Lyonette and Crompton, 2015). Highly educated women in hypogamous couples may thus experience greater work–family conflict not only due to self- or socially imposed strategies of gender-restorative compensation, or longer work hours, but also because of receiving less support from their partner.²

Granted, highly educated women could tap into financial or relational resources (Bianchi and Milkie, 2010) to externalize family work (Craig *et al.*, 2016), or

bargain the allocation of domestic tasks (Baxter, Hewitt and Haynes, 2008). Nevertheless, well-educated women with an equally educated partner probably manage to negotiate a more balanced allocation of time and resources than those partnering down, given that homogamous couples tend to generally better agree and coordinate in the organization of family life (Pesando, 2021). Since partners with an egalitarian involvement in domestic and family work report fewer depressive symptoms (Kalmijn and Monden, 2012), homogamous women are likely less depressed. This may also occur given better relationship satisfaction (e.g. Zhang *et al.*, 2012), and an overall reduced level of partnership stress. Furthermore, and perhaps most importantly, as lower educated male partners earn less than the highly educated, hypogamous women may also experience more household-level economic insecurity, which previous research associated with a higher prevalence of depression (Van de Velde *et al.*, 2010; González and Vives, 2019). Therefore, through either a straining double burden, lower relationship quality, or greater financial difficulty, hypogamy would expose highly educated women to supplementary stress, leading to a greater risk of depression than homogamy would. With the data at hand, we can only directly explore the last mechanism, namely the economic security of hypogamous women and their family. We specifically examine the moderation of women's and their partners' employment status, and subjective household income. Partner's employment is included to take account of the link between women's mental health and their partners' changes in employment status (Nikolova and Ayhan, 2019), but also to account for potential instability in household employment following the 2008 economic crisis (Sánchez-Mira and O'Reilly, 2018).

Cross-National Differences

Several studies pointed out that egalitarian gender regimes are associated with fewer depressive symptoms for women (Chen *et al.*, 2005; Van de Velde *et al.*, 2013; Platt *et al.*, 2016). Gender regimes are usually conceptualized at the macro (i.e. national) level³ (Walby, 2009), and represent collective arrangements prescribing what women and men should be and do over the life course (Mason, 2001; Pascall and Lewis, 2004; Ridgeway and Correll, 2004). These assumptions are multidimensional. While scholars differ in their assessment of which dimensions matter most, three appear to be fundamental: (i) the production of gender-specific symbols and beliefs; (ii) the allocation of work; and (iii) the distribution of power and control across gender (Mason, 2001; Pascall and

Lewis, 2004; Connell, 2009). Though these dimensions are broadly interconnected, current scholarship underlines the complexity and inner contradictions of gender systems (Walby, 2009), challenging the 'broad national types' approach often used in earlier days (Sánchez-Mira and O'Reilly, 2018). Besides the importance of multidimensionally examining national gender systems, each educational stratum, with its own gender regime, must be separately considered, making it even more pertinent to look at one educational group only, as this study does.

We specifically consider three indicators of national gender systems. The first is the magnitude of educational gender inequality (in women's favor), indicative of the normalization of women's symbolic increase in status. The second is the strength of family support policies, which typically influence how gendered the household division of public and private labour is. Finally, although by no means its only indicator, we tackle the third dimension of gender systems (i.e. power relations between men and women) by introducing a measure of gender parity in earnings.

First, the country-level prevalence of the female educational advantage could play a role in normalizing women's adoption of a more dominant social status in general and, by extension, the conjugal arrangement of female hypogamy (i.e. women gaining symbolic power in the private sphere). De Hauw *et al.* (2017) pointed out that the acceptance of hypogamy might be influenced by how long ago the gender gap in education began to reverse. The actual number of hypogamous partnerships also directly depends on the magnitude of the female educational advantage. Observing the strength of this link on a global scale suggests that people became less attached to norms promoting male educational dominance within marriage, and swiftly adapted their partnering choices in response to the increasing share of more educated women on the marriage market (Esteve *et al.*, 2016). Looking at the Belgian context, Theunis *et al.* (2017) have specifically tested the effect of the regional spread of hypogamous unions on union dissolution and found that the stability of these unions increased in regions and municipalities where they were more common. Adopting the 'diffusion of innovation' perspective, Schwartz and Han (2014) argued that initially unconventional hypogamous marriages became more stable over time given that increased adoption correlated with lower social costs (e.g. less pressure to 'do gender' for both partners). We therefore expect to find that *the larger the female educational advantage at the country level, the lower the depression levels of women in hypogamous couples in comparison to similarly educated women in homogamous unions* (Hypothesis 2).

Second, welfare regimes known for generous family support, e.g. the Nordic social democratic model, promote high levels of health and well-being for women (Borrell *et al.*, 2014). The institutional provision of resources and support for work-family balance (especially paid time off and childcare subsidies) for instance has been shown to alleviate the stressors incurred by the presence of dependent children for both parents, allowing for engagement in the workplace and better financial security (Glass, Simon and Andersson, 2016). We expect to find an inverse relationship between macro-level policy support for family and women's depression, irrespective of partnership configuration. However, *favorable policy contexts could have a greater impact for women in hypogamous couples than for those in homogamous arrangements* (Hypothesis 3). When the welfare state supports the male breadwinner/female carer model, such as in Germany, and implicitly perpetuates a gendered division of labour, women having a higher educational attainment than the male partner may experience an even greater double burden. To better conform to the dominant traditional family model (Jurczyk *et al.*, 2019), men in hypogamous couples may contribute less to housework whereas women may over-engage in family tasks to compensate for their often greater contribution to household income. The economic strain of hypogamy may also be stronger in the absence of a supportive policy environment, triggering additional stress. Increases in macro-level institutional support for families may thus particularly reduce the depression risk of highly educated women partnering down.

Third, as noted earlier, women with a higher level of education than their partner usually earn a greater share of household income (e.g. Klesment and Van Bavel, 2017). We can expect this relative economic advantage to be even greater in countries with high income parity between men and women. Contexts that encourage gender equality in employment and earnings positively impact women's mental health in general (Chen *et al.*, 2005). For hypogamous women, equitable access to economic resources may particularly improve mental well-being via increased bargaining power within the couple. A considerable income advantage arguably reduces stress both directly as women can exert greater control over household resources to alleviate time pressure (Baxter *et al.*, 2008), and indirectly as they can more easily consider leaving the union if necessary (Fraser, 1993). A small gender pay gap at the macro-level might also go hand in hand with other practices of gender

equality (Chen *et al.*, 2005), including a more egalitarian (and thus less stressful) division of housework within the couple (Baxter, 1992; Fortin, 2005). We therefore expect that *higher macro-level income parity is linked to a lower difference in depression between hypogamous and homogamous women* (Hypothesis 4).

Data and Method

Data

The study makes joint use of the third (ESS Round 3, 2006), sixth (ESS Round 6, 2012), and seventh (ESS Round 7, 2014) waves of the ESS. The ESS is a biennial European cross-national survey that carries out face-to-face interviews on strict probability samples of resident national populations aged 15 or older living in private households. The questionnaire targets wide-ranging topics related to beliefs, attitudes, social issues, well-being, as well as the socio-demographic profile of respondents and (when present) their partner. The cross-national reach of the survey provides a unique opportunity to analyze the link between female depression and educational assortative mating across different contexts. The three selected waves collected data on depression for the following 27 countries: Austria, Belgium, Bulgaria, Switzerland, Cyprus, Czech Republic, Germany, Denmark, Estonia, Spain, Finland, France, UK, Hungary, Ireland, Israel, Iceland, Lithuania, the Netherlands, Norway, Poland, Portugal, the Russian Federation, Sweden, Slovenia, Slovakia, and Ukraine. Latvia and Romania also participated in Round 3 but were excluded due to the absence of design weights (see information on weighting below). Kosovo, which participated in Round 6, was also omitted due to missing information on macro-level indicators. We also excluded Albania, Italy, and the 2012 sample for Czech Republic because of a small number (i.e. below 20) of hypogamous women with high-level education (see the distribution of subsamples across country, educational configuration, and survey round in Appendix Table A1). To summarize, two countries (Czech Republic and Iceland) contributed one round only, eight other countries two waves (e.g. Austria, Bulgaria), and the remaining seventeen countries all three selected rounds.

For the purpose of our analyses, we selected currently married or cohabiting respondents older than 24,⁴ meaning at ages where they are more likely to be in a committed union, and to have completed or in the process of completing their formal tertiary education

(OECD, 2017). For the same reasons, we discarded respondents who reported being in school. Similar to other studies (Bracke, Van De Straat and Missinne, 2014; Buffel, Van de Velde and Bracke, 2015; Dudal, Verhaest and Bracke, 2018), we also excluded the over-65 to focus on the working-age population, but also to avoid having respondents potentially affected by depression-inducing health conditions in old age (Wu, Schimmele and Chappell, 2012). From the original sample of $N = 132,393$ respondents included in the 27 targeted countries, we excluded men ($n = 60,718$), un-partnered respondents ($n = 31,490$), those outside the targeted age group ($n = 7,817$), women with non-tertiary education ($n = 22,127$), those still in education ($n = 115$), and cases with missing information on several variables of interest ($n = 467$). The final analytical sample comprised of $N = 9,659$ high-educated women. The rate of missing values for the dependent variable was 0.27%. For the independent variables, it ranged from 0.10% (for presence of children) to 2% (for partner's education). Finally, similar to previous studies using the same data source (Van de Velde *et al.*, 2010; Bracke *et al.*, 2014; Palència *et al.*, 2014), to correct for different probabilities of being sampled across countries, the data were weighted using design weights.

Dependent Variable

In the ESS, depression was assessed using eight items describing the frequency of experiencing each of the following in the week preceding the survey: felt depressed, felt that everything was an effort, sleep was restless, felt happy, felt lonely, enjoyed life, felt sad, or could not get going. There are four response categories: 0 'seldom or never', 1 'sometimes', 2 'often', to 3 'most or all of the time'. The eight items represent a subscale of the original Center for Epidemiological Studies-Depression (CES-D) battery (Radloff, 1977), commonly used in family studies of depression (Augustine and Crosnoe, 2010; Lin *et al.*, 2019). After reverse coding positively worded items (e.g. felt happy, enjoyed life), and applying mean substitution when at most four items were missing,⁵ we aggregated each person's responses to create a cumulative score ranging from zero to 24. A Skewness/Kurtosis normality test revealed that we could not reject the hypothesis that depression is normally distributed at $P < 0.05$. Furthermore, inspecting the internal reliability of this scale gave a Cronbach's alpha of 0.782 for the full sample, with similar values for country subsamples. While we acknowledge the risk of

misinterpreting potential measurement errors as actual cross-national differences, as respondents from different countries might have read the items differently, we assume the measurement equivalence of the scale, which previous work also attested to (Van de Velde *et al.*, 2010; Missinne *et al.*, 2014).

Independent Micro-Level Variables

The individual-level factor of primary interest was the highest level of education achieved by the respondent and that of her partner. For both measures, we distinguished between two categories: 'non-tertiary' (grouping individuals with either primary or secondary education), and 'tertiary' (including those with a Bachelor's degree or higher tertiary education). In line with the operationalization typically used in previous work on educational assortative mating (e.g. Qian, 2018; Schwartz and Han, 2014), we constructed our main independent variable of *educational sorting*, differentiating between homogamy (partners share the same level of education), and hypogamy (the woman is better educated than the man). The option of distinguishing between couples in which the man has primary versus secondary education was not possible given that the majority (85.1%) of hypogamous unions comprised of the latter. In fact, in some countries (e.g. Austria, Bulgaria, Poland in 2006, Switzerland in both 2006 and 2012, Hungary and Slovenia in 2012), hypogamy among women with tertiary education exclusively referred to unions in which men had secondary education.

To measure the respondent's and partner's employment status, we distinguished between (i) 'paid work'; (ii) 'unemployed'; (iii) 'retired'; (iv) 'looking after the home or family'; and (v) 'other', which combined smaller sub-sample categories, such as community or military service, other unspecified categories, but mostly permanently sick or disabled for a long time. Furthermore, we included a subjective indicator of household income. Similar to Reibling *et al.* (2017), we relied on a subjective rather than an objective indicator of household income given its greater measurement consistency across countries and survey waves, and its much smaller share of missing information (0.82% compared to 23.20% for objective income). To assess their family's financial situation, respondents were asked to describe how they felt about their household's income by choosing one of the following options: (i) 'living comfortably on present income', (ii) 'coping on present income', (iii) 'finding it difficult on present income', and (iv) 'finding it very difficult on present income'. Since frequencies for the fourth

category were low in certain countries, the last two categories were merged.

We also included a series of micro-level control variables that could potentially confound the relationship between depression and educational sorting, such as age (in years)⁶, whether legally married (as opposed to cohabiting), or having children living at home (proxy for motherhood). To account for differences in the time period when respondents were surveyed, we also controlled for ESS round in additional micro-level models (available upon request, with similar results), but removed it from the main analysis given strong collinearity with our contextual measures, particularly educational gender inequality. We also considered and ran models controlling for migration background, partners' age difference, or previous marital experience, but adding these variables did not alter results. To limit the amount of missing data, we excluded them from final models, but included information on previous marital experience when exploring sample characteristics.

Independent Macro-Level Variables⁷

At the macro-level, we first selected an indicator of the educational gender gap, which measures the probability of encountering a 25–34-year-old randomly selected woman who is more educated than a randomly selected man, minus the probability of encountering a 25–34-year-old randomly selected woman who is less educated than a randomly selected man (more details in [Permanyer and Boertien, 2019](#); the authors also provided the data). The measure goes from -1 (i.e. full male educational advantage), to 0 (i.e. educational gender equality), and finally 1 (i.e. full female educational advantage). In other words, the higher (and above 0) the value of the educational gender gap, the greater the degree of familiarization with women having more educational training than men. The data provide information for multiple countries at five-year intervals (e.g. 2005, 2010, 2015). For each country, we chose the year closest to the year of data collection (e.g. 2005 for round 3, 2010 for round 6, and 2015 for round 7). Using 2010 values for both round 6 and 7 yielded similar results (available upon request). The distribution of this and other macro-level factors across country and ESS round is provided in Appendix Table A2.

Second, to measure the degree of welfare support for families we used an indicator of family-related social spending ([OECD, 2019](#)). The data capture total public spending on family benefits (in cash and in kind through the provision of goods and services) as a percentage of GDP. Public social spending on the family includes the

following three types of welfare arrangements: (i) child-related cash transfers to families with children, income support during parental leave, and income support for lone-parent families; (ii) direct financing and subsidizing of childcare providers and early education facilities, childcare support through earmarked payments to parents, assistance for young people and residential facilities, family services (e.g. center-based facilities and home help services for families in need); and (iii) tax exemptions for families with children, child tax allowances, and child tax credits amounts that are deducted from the tax liability. For this and the following macro-level indicator, we accessed data corresponding to 2005, 2011, and 2013, respectively, meaning that the measure is lagged by one year compared to survey year. Because the OECD list of countries excludes Albania, Bulgaria, Cyprus, the Russian Federation, and Ukraine, the analyses that tested the association between female depression and family-related social spending exceptionally covered 24 countries only.

Third, we capture the degree of gender inequality in earning power by looking at the ratio of estimated female-to-male earned income. The indicator ranges from 0 to 1 , with values closer to 1 indicating greater gender income parity. The data are derived from Global Gender Gap Reports issued by the World Economic Forum ([World Economic Forum, 2013](#)). The earned income ratio is calculated using the United Nations Development Programme methodology (refer to the Human Development Report 2009).

Method

Given the hierarchical nature of the data, we used multi-level linear modelling ([Snijders and Bosker, 2011](#)) to test our predictions. This type of model not only accounts for non-independence due to the clustering of respondents within countries, but it also allows us to directly test whether the effect of educational sorting on depression varies across contexts with different gender regimes. Similar to [Dudal et al. \(2018\)](#), we opted for a three-level design, with respondents (level 1) nested in country-surveys (i.e. country and ESS round combinations) (level 2), clustered in countries (level 3). After removing small sub-samples (i.e. fewer than 20 cases in one country \times survey category), this resulted in 69 level-2 units nested in 27 level-3 units. We used this strategy to more accurately reflect contextual variation, which stems not only from cross-country differences (e.g. more gender conservative German-speaking countries versus more gender progressive Scandinavian countries), but also from within-country differences across time. In the

course of eight years (2013 compared to 2005), Slovenia, for instance, progressed from 0.62 to 0.81 in gender income parity, while also increasing the index of educational inequality from 0.134 to 0.230. To more precisely infer the hypogamy effect and cross-level interaction effects (Heisig and Schaeffer, 2019), we specified random slopes for hypogamy at the country \times survey level, meaning that the effect of partnering down on women's depression was allowed to vary across different countries measured at different points in time.

We first tested the association between women's depression and hypogamy in a model including the main effect of hypogamy, controlling for basic demographic covariates, e.g. married status, motherhood, and age (Model 1). To this baseline model, we then added measures of economic security to test their potentially explanatory part in the link between hypogamy and depression (Model 2). In a final stage, we included cross-level interactions between educational sorting and our three contextual factors of interest (Models 3 to 5).

The specification of Models 1–2 took the following mathematical form:

$$y_{ijk} = \beta_0 + \beta_1 \text{hypogamy}_{ijk} + \beta_2 \text{covariate}_{ijk} + v_k + u_{0jk} + u_{1jk} \text{hypogamy}_{ijk} + \varepsilon_{ijk}, \quad (1)$$

where y_{ijk} was the depression level of respondent i in country \times survey j , and country k , modelled as a linear function of hypogamy. The model further included the intercept β_0 , and covariates specified at the individual-level (e.g. covariate_{ijk} with slope coefficient β_2). β_1 denoted the difference in depression experienced by women in hypogamous versus homogamous unions, adjusted first for basic demographic controls (Model 1), and then economic measures (Model 2). v_k and u_{0jk} represented random effects at level-three (country) and level-two (country \times survey), respectively. Finally, u_{1jk} was the level-two random slope term for hypogamy, and ε_{ijk} represented the residual error term at the individual level.

With the inclusion of cross-level interactions, Models 3–5 then became:

$$y_{ijk} = \beta_0 + \beta_1 \text{hypogamy}_{ijk} + \beta_2 \text{covariate}_{ijk} + \beta_3 \text{genderregime}_{jk} + \beta_4 \text{genderregime}_{jk} \times \text{hypogamy}_{ijk} + v_k + u_{0jk} + u_{1jk} \text{hypogamy}_{ijk} + \varepsilon_{ijk} \quad (2)$$

The models added the main effect of either one of the three macro-level indicators of gender regime (with corresponding slope coefficient β_3) and the interaction with

individual-level hypogamy (with slope coefficient β_4). All models were fitted with Stata's (StataCorp, 2015) *mixed* command. Assuming that random effects were correlated, we opted for models with unstructured covariance, and thus estimated unique variances (σ_{u0}^2 and σ_{u1}^2) as well as a covariance term (σ_{01}).

Results

Descriptive Statistics

Table 1 presents summary statistics for the individual-level variables included in the analysis, by educational

Table 1. Descriptive statistics of individual-level variables used in the analysis of depression of high-educated women ($N=9,659$), by educational sorting. Mean (standard deviation)

	Homogamy	Hypogamy	Sig.
Mean (standard deviation)			
Depression (range: 0–24)	4.76 (0.05)	5.06 (0.06)	***
Age (range: 25–65)	43.08 (0.15)	42.93 (0.17)	
Column %			
Married	83.7	79.9	***
Mother	68.5	69.4	***
Divorced	8.8	11.1	***
Survey time			
2006	36.7	32.4	
2012	34.8	37.6	
2014	28.6	30.0	
Employment			
Paid work	81.6	81.3	
Unemployed	2.6	3.0	
Retired	4.2	4.7	
Looking after the home or family	10.1	9.3	
Other	1.5	1.8	
Subjective household income			***
Living comfortably on present income	48.4	34.0	
Coping on present income	38.8	47.4	
Difficult on present income	12.9	18.6	
Partner's employment			***
Paid work	90.1	85.5	
Unemployed	1.5	3.7	
Retired	6.5	7.0	
Looking after the home or family	0.6	1.1	
Other	1.2	2.6	
Total (unweighted)	5,689	3,970	

Notes: Data weighted by *dweight*.

*** $p < 0.001$.

Source: ESS, waves 3, 6–7.

sorting. In line with our expectations, it was first apparent that highly educated women in hypogamous couples were more depressed on average (mean score of 5.06) than those in homogamous couples (4.76). Given that scores greater or equal to ten usually indicate a high frequency of depressive symptoms (Van de Velde et al. 2010), both scores may be categorized as low to moderate in level. Furthermore, suggesting a predilection for non-marital cohabitation, as alluded to by Grow, Schnor and Van Bavel (2017), women partnering down were less often married than those with a similarly educated partner. Even though there were no significant differences in terms of women's labour force participation across partnership configuration, male partners were significantly less likely to be in paid work if partnering up. Additional explorations of engagement in full- versus part-time work (Appendix Table A3) revealed that compared to homogamous women, those in hypogamous couples held full-time jobs more often, and worked longer hours in general and when full-time employed (though the contrast for the latter was non-significant). The hypogamous unions in our sample were thus defined by both men's lower contribution to paid work and women's greater involvement in paid work,⁸ as earlier suggested. Table 1 finally also confirmed that hypogamous women were subjectively less financially secure (i.e. least likely to report living comfortably on present income) than homogamous women.

Multivariate Results

Our initial hypothesis predicted that high-educated women partnering down would be more depressed than women with an equally educated partner. Table 2 reports the estimates of a multilevel linear analysis modelling the main effect of educational sorting on women's depression, controlling for basic demographic measures (Model 1). Results show that partnering down was associated with a significant increase of 0.327 units in women's depression, confirming Hypothesis 1. Findings related to random effects additionally show that the hypogamy effect varied significantly across national contexts at different points in time. Additional analyses including an interaction between educational sorting and ESS round (not shown) indicated that although the hypogamy estimate was significant across all waves, it was greater for women interviewed in the earliest round (i.e. 2006), suggesting a steady decrease in the mental

health disadvantage of partnering down. Accounting for micro-level economic measures in Model 2 explained away more than half of the hypogamy effect on women's depression, even though the estimate remained significant at the $P = 0.10$ level. Including factors of economic well-being also reduced 33.3% of the variance in the hypogamy-homogamy difference between country \times surveys.

At the contextual level, we first anticipated that a greater female educational advantage would be associated with a smaller difference in depression between hypogamous and homogamous women (Hypothesis 2). To test this prediction, Model 3 in Table 2 added a cross-level interaction between hypogamy and a macro-level measure of educational gender inequality. For a more accessible reading of findings, Figure 1 (the left-hand column) additionally provides a graphical representation of (A) absolute and (B) relative values of predicted depression, by educational sorting, and across different values of this contextual measure, keeping all covariates at average levels. Results indicate that national contexts with an increased educational gap (in women's favor) were associated with a large decrease in depression for both homogamous and hypogamous women. The decline was nevertheless significantly steeper among the former. The predicted depression scores for homogamous women in contexts with the lowest (Switzerland, wave 3) and highest female educational advantage (Estonia, wave 7) were 5.770 and 4.131, respectively (leading to a difference of 1.639). For hypogamous women, the scores were 5.473 and 4.525, respectively (difference of 0.948). In contexts where high-educated men were still in oversupply, hypogamy was associated with a slightly lower level of depression among well-educated women; in contexts of increased female educational advantage, however, partnering down was ultimately linked to greater depression. Hypothesis 2 is thus disconfirmed.

We subsequently hypothesized that the link between hypogamy and female depression would be weaker in countries with more generous family-related policies (Hypothesis 3). Results (corresponding to Model 4 and in Figure 1, middle panel) show that despite having a much smaller magnitude than the previous contextual effect, family-related welfare spending was also significantly negatively associated with women's depression (e.g. for homogamous women, depression dropped by 0.250 units with a one unit increase in spending). The hypogamy-homogamy contrast was indeed lower in

Table 2. (Continued)

	Model 1		Model 2		Model 3		Model 4		Model 5	
	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.	Coef.	S.E.
<i>Micro-level controls</i>										
Married	-0.153	0.094	-0.070	0.100	-0.072	0.098	-0.089	0.108	-0.073	0.099
Mother	0.001	0.090	-0.058	0.084	-0.059	0.084	-0.022	0.085	-0.059	0.084
Age	0.018***	0.005	0.019***	0.004	0.019***	0.004	0.018***	0.005	0.019***	0.004
Intercept	4.037***	0.222	3.410***	0.222	3.846***	0.240	3.941***	0.334	3.938***	0.338
<i>Random effects</i>										
Country-level variance	0.681	0.281	0.300**	0.125	0.355*	0.162	0.145***	0.060	0.291**	0.117
Country × survey-level variance	0.065*	0.084	0.087*	0.095	0.045†	0.075	0.085*	0.095	0.078*	0.095
Hypogamy country × survey-level variance	0.123***	0.056	0.082***	0.051	0.073***	0.048	0.038*	0.051	0.081***	0.052
Hypogamy-intercept country × survey-level covariance	0.233	0.610	-0.009	0.470	0.204	0.678	-0.008	0.746	-0.046	0.495
Individual-level variance	10.523***	0.487	10.114***	0.484	10.113***	0.484	9.497***	0.374	10.114***	0.484
Log-pseudolikelihood	-26440.1		-26227.8		-26223.2		-21948		-26226.1	
N (country)	27		27		27		23		27	
N (country × survey year)	69		69		69		61		69	
N (unweighted)	9,659		9,659		9,659		8,238		9,659	

Note: †p < 0.10; *p < 0.05; **p < 0.01; ***p < 0.001.

Source: ESS, waves 3, 6–7. Data weighted by dweight. S.E. = standard error.

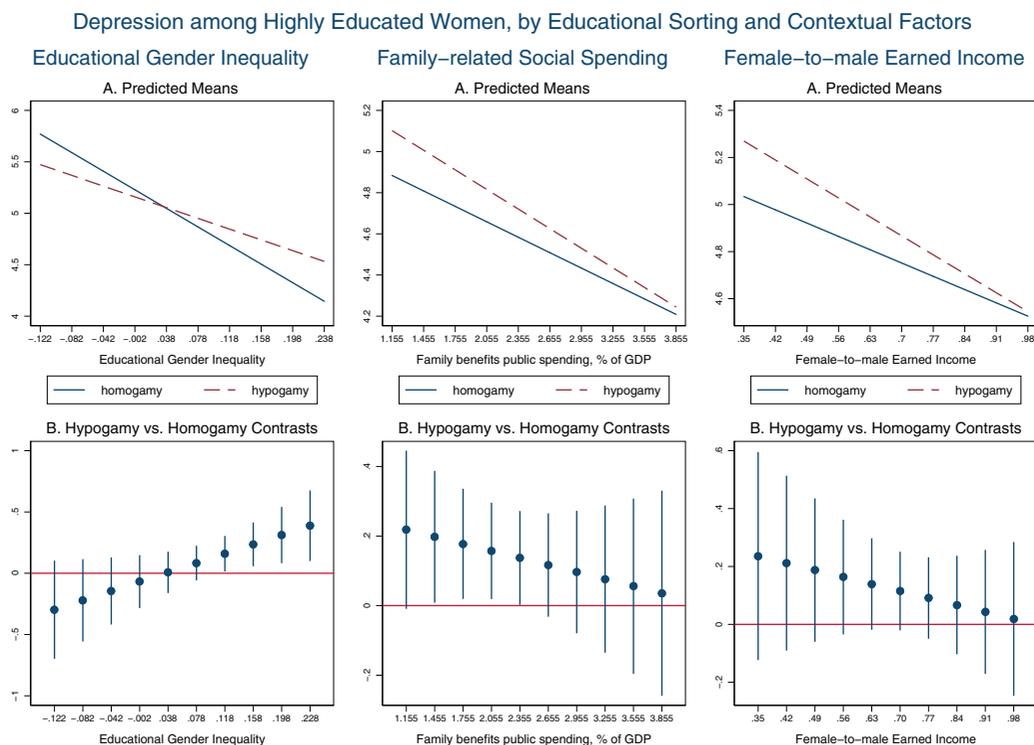


Figure 1. Absolute values (Panel A) and contrasts (Panel B) of predicted depression for hypogamous and homogamous highly educated women, by contextual factors (95% confidence intervals)

Note: Based on regression estimates reported in Table 2.

contexts of high social spending like Denmark, but given a non-significant and small cross-level interaction effect, we cannot confirm Hypothesis 3, at least when looking at the general sample. Further analyses conducted on married women only confirm that the hypogamy effect disappeared in countries with greater family policy provisions, but reveal a much greater interactive effect (see below).

Finally, we suggested that a greater gender parity in earnings would be correlated with a smaller hypogamy–homogamy difference in the depression of high-educated women (Hypothesis 4). Model 5 and Figure 1 (right-hand panel) indicate that the depression of women with a similarly educated partner decreased (by 0.807 units) with increasing levels of income parity. This decrease in depression was even steeper for hypogamous women, resulting in almost no difference between the two groups in countries with lower wage gaps. However, as the interactive effect was non-significant, we could not confirm Hypothesis 4. Further analysis focusing on married women again show greater declines and even a slight

cross-over in the hypogamy–homogamy depression gap, despite the effect not reaching significance, as we next detail.

Selection into and out of Unions

The use of cross-sectional data made it difficult to disentangle the actual effect of educational hypogamy on women's depression from underlying selection effects. In addition to previously suggested differences in work-life balance, relationship satisfaction, or economic distress, the hypogamy effect could be rooted in other (un)observed factors. Certain confounding psychological characteristics—being prone to risk (Rauscher, 2020) for instance—could determine both the choice of a lower educated partner and the incidence of depression. Hypogamous women are also more likely to belong to demographic groups with more depression-prone inherent traits, such as cohabiters or divorcees (Idstad *et al.*, 2015; van Hedel *et al.*, 2018). While Although we were not able to consider differences in psychological profile, or to more broadly account for unobserved

heterogeneity with the data at hand, we did engage in three auxiliary analyses focusing on different demographic sub-groups to check the sensitivity of results to sample selection.

First, given the potential mental health selectivity of individuals in cohabiting versus marital unions (e.g. Perelli-Harris and Styruc, 2018), we repeated the main analysis on a sample of married female respondents only. Results replicating Model 1 and 2 (Supplementary Table S1), as well as the contextual analysis (Supplementary Figure S1) mostly resemble earlier findings, particularly at the micro-level. One notable difference compared to previous results, as already mentioned, was the much greater decrease in the hypogamy effect with increases in family-related welfare spending or income parity. We also saw a significantly positive depression gap between women who marry down and those with an equally educated spouse in low welfare-spending contexts. In countries with more generous institutional support though, the mental health disadvantage of highly educated women marrying down was close to zero. Furthermore, the hypogamy–homogamy depression gap was positive (albeit non-significant) in contexts of low income parity, yet smaller and even slightly inverted in contexts of high income parity.

Second, it could be argued that given the increase in domestic work (due to childcare), a particularly unequal division of labour among parents (Baxter *et al.*, 2008), and the susceptibility to depression among mothers who contribute a high share to the family income (Kramer and Pak, 2018), the hypogamy–homogamy depression contrast might be even greater in the presence of children. As almost three-quarters of our respondents had children, instead of running a direct comparative test between mothers and non-mothers, we selected a subsample comprised exclusively of women with children. Results in Supplementary Table S1 confirm that the hypogamy effect is much stronger (i.e. an increase in 0.421 units instead of 0.327) when looking at mothers only, but findings plotted in Supplementary Figure S2 reveal similar contextual effects as those shown for the general sample. We did however notice that in contexts with less generous welfare support or low income parity, the mental health disadvantage of partnering down was more pronounced than previously observed for the general sample.

Third, mentally distressed individuals are more likely to be selected out of marriage (Idstad *et al.*, 2015). Since hypogamous unions were more likely to dissolve in the past (Schwartz and Han, 2014), it is possible that a certain level of mental health vulnerability could drive both the propensity to divorce and the tendency to

hypogamously match, especially among earlier cohorts. To mitigate this potential selection bias, we ran a **supplementary analysis** focusing on high-educated women who never experienced divorce. Results in **Supplementary Table S1** largely replicate earlier findings at both the individual- and contextual-level.

Discussion

Partnerships, particularly marriage, are a significant contributing factor to mental well-being (e.g. Uecker, 2012), but we have little understanding on how specific partnership configurations affect mental health. Driven by the rapid increase in women's higher education in recent decades, couples in which women are better educated—and not men as per tradition—are currently on the rise (Esteve *et al.*, 2012, 2016; Van Bavel *et al.*, 2018). The present study adds novel insights into whether partnering down, associated with poor physical health in the past (Monden *et al.*, 2003), fosters higher levels of female depression compared to having an equally educated partner. Using multilevel random slope linear models to test both micro- and macro-level effects, and drawing on ESS samples of high-educated women surveyed across three time points in 27 European countries, we first found that highly educated women in hypogamous arrangements were indeed more depressed than those in homogamous couples. The effect was partly due to greater economic difficulties, identified by previous studies as important depression risk factors (Van de Velde *et al.*, 2010; González and Vives, 2019). Though not directly tested, additional reasons why highly educated women partnering down were more vulnerable to depression include a potentially lower level of partnership quality (Zhang *et al.*, 2012) or a heavier double burden (Jurczyk *et al.*, 2019) given longer working hours, gender-restorative compensation behaviours, or men's greater resistance to an egalitarian division of household tasks when lower educated.

Results also revealed the conditioning role of gender systems (as reflected in their cultural, institutional, and economic dimensions) on the link between female depression and hypogamy. First, in countries with a greater female educational advantage, despite seeing a significant and substantial improvement in the mental health of high-educated women in both homogamous and hypogamous arrangements, the former benefitted more than the latter (contrary to our hypothesis). Homogamous women with tertiary education were in fact slightly more depressed in countries where men still outnumbered women in higher education (e.g. Switzerland, Germany), but significantly less depressed

in countries with a high educational advantage for women (e.g. Estonia, Slovenia, Portugal). A potential explanation may be the selectivity of hypogamous women in contexts of low female educational advantage, where eligible men with university degrees were still widely available. Under less constraining marriage market conditions, women may have opted into partnering down given personal preference (e.g. wanting to be the head of the household) rather than pushed by the scarcity of options, and thus likely happier with their partnership than women in homogamous couples. In environments where women's lead in education was widely diffused and normalized, however, highly educated women thrived more in homogamous than in hypogamous unions, possibly given the accelerated rate of involvement in the domestic sphere among men with higher than lower education (Goldscheider *et al.*, 2015). Men's actual engagement in home production, even when professing egalitarian attitudes, is contingent on social diffusion processes (de Laat and Sevilla-Sanz, 2011): in gender conservative contexts (i.e. where men still hold a dominant social status as measured by rates of educational attainment), few high-educated men may actually pitch in; in environments with increased exposure to women holding greater symbolic power, pioneering male partners who take on more domestic work become the new norm, and are quickly followed by the mass of highly educated men.

The other two contextual indicators we tested were more in line with expectations. While stronger institutional support for families did not significantly alter the hypogamy-homogamy depression gradient for the general sample, additional analyses revealed that among highly educated married women, the degree to which policy contexts were favourable towards families did matter for significantly reducing and even closing the depression gap. A more prominent effect of institutional support on the mental health of married women was probably due to married couples more often opting into traditional gender roles than non-marital cohabiting couples (Ryser and Le Goff, 2015). This may have impacted the amount of household chores well-educated women marrying down took on, making them even more vulnerable to the scarcity of institutional support, and its implicit endorsement of the traditional family model. In contexts of high welfare spending on families, hypogamous married women likely achieved a greater balance between work and family duties, and no longer faced a mental health disadvantage compared to women with an equally educated spouse.

Finally, our analyses revealed that macro-level contexts with a smaller gender pay gap were negatively

associated with women's depression, irrespective of educational sorting. Though the effect was non-significant, income parity reduced the mental health disadvantage of hypogamous women, in that the magnitude of the depression gap was larger in contexts of low income parity, and close to zero in contexts of high income parity. As initially stated, the greater earning capacity of hypogamous women in high income parity contexts likely helped them relieve the double burden, gain leverage on household decisions, and certainly increase economic security. Much more than structural gains in the female educational advantage, progress in pay equity may have more closely paralleled emerging gender equality across other domains (Baxter, 1992; Fortin, 2005), such as the gender allocation of home production. In contexts with reduced gender pay gaps, highly educated women partnering down may have thus benefitted from better income as well as more egalitarian gender practices to ultimately experience less depression-inducing family-related stress. This particularly occurred for university-educated women in more gender-rigid couple arrangements, for instance, when married, as [supplementary analyses](#) revealed a much clearer effect of income parity for high-educated women in this sub-category.

Altogether, our study asserted the importance of the couple's educational configuration for how depressed highly educated women are, and provided evidence that women partnering (and especially marrying) down did not suffer from a mental health disadvantage in settings that institutionally and economically endorse gender equality and female empowerment across work and family. The study however was not without limitations. First, as previously mentioned, we could not directly assess the mediating effect of work-life conflict, or relationship quality. Moreover, since the majority of university-educated women partnering down in our sample were paired with men with secondary education, we could not compare hypogamy effects at different levels of male education. Given the endogeneity of divorce (as previously noted), the cross-sectional nature of our data (Monden, 2007), and the inability to control for partnership duration,⁹ we also could not fully discount the risk that more depression-prone hypogamous women, especially at earlier time points, dissolved their union more often. The levels and contrasts we encountered were likely conservative, potentially underestimating the depression gap among newly formed couples. An instrumental variable approach (e.g. Rauscher, 2020) could better adjust for endogeneity, whereas longitudinal data could allow for additional insights into how mental well-being in hypogamous unions unfolds over time, at different points in the relationship, and with an inclusion of a control group

(i.e. university-educated women who never marry). An additional task for future research looking at hypogamous couples includes disentangling and identifying other depression-inducing partnership dynamics and relationship stressors (Shrout *et al.*, 2019). The variation in the mental health of men partnering up in education, between-partner contagion or cross-overs effects (Thomeer, Umberson and Pudrovska, 2013) would also be compelling to address. Since the number of country-level units in our analysis was modest, we additionally encourage future research to analyze data on more than 27 countries. Finally, we acknowledge that our study represents a largely descriptive account of how the depression levels of highly educated women partnering down varied across a set of European countries. Since different mechanisms of selection into hypogamy may operate in each country, with different factors potentially confounding the relationship between partnering down and depression, future work should attempt to directly tackle questions of selection and causality across different national contexts.

Supplementary Data

Supplementary data are available at *ESR* online.

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Notes

- 1 For instance, new evidence challenges the universality and magnitude of the mental and emotional health benefits of cohabiting or getting married (Kalmijn, 2017; Perelli-Harris *et al.*, 2019).
- 2 Though it was not possible to empirically test these claims with the data at hand (given the absence of measures scrutinizing the division of household tasks in any of the ESS waves included), data from ESS Round 2 (2004) for instance, which did include such measures, confirm that high-educated women in hypogamous versus homogamous couples spent significantly more time doing housework compared to their partner (results available upon request). As this difference was particularly visible in female breadwinner households (i.e. in which only the female partner works full-time), compensation was indeed stronger when women have both the educational and employment advantage.

- 3 We acknowledge that gender is a multi-level system of inequality that ranges from macro-level institutions and norms, meso-level interactional patterns of behaviour (including practices of ‘doing gender’ within families), to micro-level gendered identities (Ridgeway and Correll, 2004; Homan, 2019).
- 4 Analyses based on a sample limited to women over age 30 revealed similar results.
- 5 This is a common practice in cross-national studies of depression using similar data (see Van de Velde *et al.*, 2013; Levecque and Rossem, 2015; Dudal *et al.*, 2018).
- 6 Age in quadratic form did not prove significant.
- 7 To again account for a potential period effect and instability in household employment following the 2008 economic crisis (Sánchez-Mira and O’Reilly, 2018), we also considered including a macro-level measure of unemployment rate, which proved to have low explanatory power, and thus discarded.
- 8 Analyses that included a distinction in women’s employment type revealed similar results as the ones presented in the Results section, and were thus left out.
- 9 A measure of cohabitation duration (based on the item ‘Year first lived with spouse or partner for 3 months or more’) could be constructed with ESS Round 3 data only. However, the number of macro-level units would become too small for an analysis focusing solely on data included in this round. Furthermore, cohabitation duration is highly correlated with respondent’s age, which is controlled for in all of our models.

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Appendix

Table A1. Educational sorting by survey year and country, among high-educated women ($N=9,659$) (row %).

	2006			2012			2014		
	F = M	F > M	Total	F = M	F > M	Total	F = M	F > M	Total
Albania						–			
Austria	52.6	47.4	48				61.3	38.7	64
Belgium	63.6	36.4	187	66.0	34.0	144	63.4	36.6	153
Bulgaria	44.9	55.1	101	52.4	47.6	180			
Switzerland	72.1	27.9	95	60.0	40.0	70	65.8	34.3	73
Cyprus	68.1	32.0	80	62.6	37.4	75			
Czech Republic							56.5	43.5	81
Germany	66.3	33.7	127	63.4	36.6	159	58.0	42.0	179
Denmark	66.2	33.8	207	59.8	40.2	199	62.0	38.0	187
Estonia	39.6	60.4	139	45.1	54.9	213	47.6	52.4	210
Spain	61.7	38.3	100	51.3	48.7	135	54.8	45.2	124
Finland	58.0	42.0	207	60.7	39.3	163	60.9	39.1	179
France	60.8	39.2	164	56.9	43.1	82	50.7	49.3	86
Great Britain	69.4	30.6	238	57.0	43.0	122	62.0	38.0	141
Hungary	32.6	67.4	65	62.9	37.1	95	51.7	48.4	91
Ireland	55.1	44.9	197	53.1	46.9	138	49.1	50.9	117
Israel				65.3	34.7	271	63.8	36.2	234
Iceland				51.1	48.9	77			
Italy						–			
Lithuania				54.7	45.3	183	53.1	46.9	203
The Netherlands	62.7	37.3	119	63.3	36.7	119	60.8	39.2	165
Norway	62.7	37.3	209	56.8	43.2	176	64.7	35.3	150
Poland	59.1	40.9	76	46.1	54.0	132	52.1	47.9	106
Portugal	47.5	52.5	67	51.2	48.8	49	45.0	55.0	45
Russian Federation	70.8	29.2	293	58.5	41.5	189			
Sweden	64.8	35.2	179	47.7	52.4	149	53.5	46.5	159
Slovenia	47.6	52.4	103	48.5	51.5	66	47.0	53.0	66
Slovakia	48.1	51.9	52	56.6	43.4	104			
Ukraine	68.2	31.9	334	50.9	49.1	169			
<i>Total</i>	61.2	38.8	3,387	56.3	43.7	3,459	57.1	42.9	2,813

Source: ESS, waves 3, 6–7.

Notes: F = M = female partner as educated as the male partner (homogamy); F > M = female partner more educated than the male partner (hypogamy); – indicates country × survey excluded due to small sample size.

Table A2. Macro-level characteristics per country and survey year.

	Educational Gender Inequality ^a			Family-related Social Spending ^b			Income Parity ^c		
	2005	2010	2015	2005	2011	2013	2005	2011	2013
Austria	-0.039		0.047	2.888		2.649	0.35		0.50
Belgium	0.070	0.080	0.083	2.574	2.835	2.850	0.54	0.72	0.63
Bulgaria	0.130	0.152		NA	NA		0.67	0.68	
Switzerland	-0.122	-0.108	-0.102	1.515	1.487	1.565	0.90	0.92	0.64
Cyprus	0.019	0.053		NA	NA		0.47	0.59	
Czech Republic			0.020			2.224			0.59
Germany	-0.037	-0.018	-0.004	2.033	2.119	2.189	0.54	0.74	0.64
Denmark	0.080	0.109	0.121	3.500	3.786	3.610	0.73	0.88	1.03
Estonia	0.213	0.229	0.241	1.751	2.233	1.912	0.64	0.65	0.65
Spain	0.118	0.142	0.151	1.155	1.332	1.306	0.44	0.60	0.60
Finland	0.138	0.142	0.139	2.840	3.092	3.214	0.72	0.78	0.69
France	0.055	0.058	0.065	2.924	2.872	2.987	0.59	0.68	0.68
Great Britain	0.026	0.040	0.050	2.861	3.913	3.708	0.62	0.74	0.53
Hungary	0.062	0.102		2.999	3.189		0.62	0.66	
Ireland	0.110	0.107	0.105	2.629	3.525	3.238	0.41	0.75	0.57
Israel		0.113	0.117		1.959	2.006		0.65	0.57
Iceland		0.113			3.381			0.73	
Lithuania		0.169	0.182		2.349	1.719		0.71	0.64
The Netherlands	0.054	0.091	0.106	1.667	1.519	1.352	0.53	0.88	0.48
Norway	0.118	0.149	0.158	2.791	3.106	3.084	0.75	1.00	0.78
Poland	0.099	0.132	0.161	1.209	1.289	1.408	0.62	0.57	0.65
Portugal	0.138	0.182	0.222	1.181	1.207	1.240	0.54	0.64	0.71
Russian Federation	0.056	0.034		NA	NA		0.64	0.62	
Sweden	0.094	0.112	0.119	3.154	3.454	3.644	0.69	0.91	0.79
Slovenia	0.134	0.204	0.230	1.904	2.140	1.940	0.62	0.62	0.81
Slovakia	0.022	0.061		1.898	2.006		0.65	0.58	
Ukraine	0.148	0.159		NA	NA		0.53	0.61	

Sources: ^aPermanyer and Boertien (2019); ^bOECD; ^cGlobal Gender Gap Reports—World Economic Forum.

Note: NA = not available.

Table A3. Employment differences between hypogamous and homogamous highly educated women, by educational sorting.

	Homogamy	Hypogamy	Sig.
	Mean (standard deviation)		
Work hours in general (range: 0–168)	37.05 (0.17)	37.69 (0.20)	*
Total (unweighted)	5,332	3,763	
Work hours when full-time employed (range: 30–168)	41.24 (0.13)	41.30 (0.17)	
Total (unweighted)	3,624	2,620	
	Column %		
Paid work			†
Full-time	82.5	84.0	
Part-time	17.6	16.0	
Total (unweighted)	4,375	3,109	

Notes: Data weighted by dweight. † $p < .10$; * $p < .05$.

Source: ESS, waves 3, 6–7.