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Is the end of educational hypergamy the end of hypergamy? Evidence from Sweden

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Abstract: Over the last decades, women have outperformed men in higher education. Following this trend, women have also increasingly "partnered down" in terms of education. In this paper, we ask whether this trend for women's educational hypogamy ("partnering down") corresponds to other forms of status hypogamy, and whether the increasing prevalence of educationally hypogamous unions has accounted for changes in the status of women relative to their male partners across cohorts. We use Swedish register data and analyze childbearing unions of post-secondary educated men and women born in 1950-2, 1960-2, 1970-2, and 1980-2. We measure relative status within unions according to social class background, income, and occupational prestige. Female hypogamous unions are only somewhat more female status-dominant than other unions. We also find that the status of women relative to their male partners over time has been generally stable in terms of the different status indicators measured, despite increasing female hypogamy. We also compare absolute status of men and women in different union types, and find that men and women in unions where both partners are highly educated tend to have higher status than men and women in other unions, with the exception of occupational prestige.

Keywords: hypergamy, educational assortative mating, gender inequality, female breadwinners

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Introduction

Over the last fifty years, societies have become more gender egalitarian as women have increased their participation in higher education and employment, and thus accessed power and status positions traditionally reserved for men. The emergence of new opportunities for women has been especially pronounced in higher education: whereas women were previously the minority, they now make up the majority of all students in most OECD countries (Schofer and Meyer 2005, KC et al. 2010).

As the status of women relative to men within society has changed on an aggregate level, the status of individual women relative to their partners within relationships has also changed. Historically, women tended to have lower socio-economic status relative to their partners (Blossfeld 2009, Esteve et. al 2012). Women's tendency to "partner up" in terms of status was driven by two factors: availability and preferences. In terms of partner availability, it has generally been possible for women to find a partner with an equal or higher status than themselves. Women's higher status achievement however, particularly their over-representation in higher education, has changed the dynamics of the partner market. In the past, in terms of men's preferences, women's status (e.g. income, education) had been less important than other attributes, and men were generally willing to "partner down" in status. These preferences for partner selection have also changed as women's education, income, and employment have become increasingly valued by men in the partner selection process (Sweeney 2002, Blossfeld 2009).

The shift away from hypergamy in unions (women "partnering up") has been particularly noticeable in educational assortative mating. Women's increasing representation (and over-representation) in higher education has made it more difficult—and in many countries numerically impossible—for all women to find a partner with higher or equal education. Recent research has shown that in countries around the world, women have become much more likely to "partner down" – in other words, enter hypogamous unions by education – rather than remain single and childless (Esteve et. al 2012, Esteve et. al 2016, Domanski and Przybysz 2007, Grow and Van Bavel 2015). This unprecedented trend could be a signifier of the emergence of greater female status-dominance in relationships, and has been connected to a greater incidence of female main-earners (Klesment and Van Bavel 2017). Female educational hypogamy can be seen as a progressive trend to the extent that it signals the increasing ability of women to occupy status dominant positions—but the balance of power within unions relies on status asymmetries along other dimensions of status as well. In this study, we contribute to the literature on women's relative status in unions by studying women's status in unions with different types of educational combinations.

We use Swedish register data which covers the entire population and provides reliable data on multiple status indicators over a long time period. The study population is all men and women in Sweden who were born in the years 1950-1952, 1960-196, 1970-1972, and 1980-1982, and who formed a childbearing union where at least one partner had completed a post-secondary education.

The major contribution of this study is to examine the extent to which female educational hypogamy is related to female hypogamy along other dimensions of status for post-secondary educated women. We study hypogamous unions (where women "partner down") and compare them to unions where both

partners have a higher education, and unions where only the man has completed a higher education. We compare men and women's status along three dimensions: social origin, income, and occupational prestige. We thus study both status markers linked to access to economic resources (income, social class) as well as social resources (education, occupational prestige). This analysis reveals the extent to which educationally hypogamous unions are characterized by female-status dominance. This assumption is implicit in much current research on female educational hypogamy, but is possible to test using the comprehensive register data available in Sweden.

The second contribution of this study is to document changes in women's relative status in unions over time. The study includes four cohorts of women who formed their unions at different stages of the process of educational expansion. We demonstrate changes in the relative status of all highly educated women contra their partner via descriptive analysis to examine whether women in hypogamous or homogamous unions have changed their standing relative to their partners over time. We also study the relative position of men/women in different union types across the cohorts. In the following sections of the paper we explain the theoretical argument of the paper, discuss the research design and data used in this study, present the results, and conclude with a discussion of the findings.

Theoretical Background

Status and power in unions

When individuals form a joint household, they pool their resources but retain some individual status attributes based on their employment, education, or social background, and these status attributes are often unequal between partners. Such status asymmetry in heterosexual romantic partnerships tends to be based on gender. Men have been more likely to have higher education, and following specialization models of marriage, have been more likely to be employed and hold prestigious occupations than their female partners (Smits, Ultee and Lammers 1998, Blossfeld 2009, Esteve et. al 2012).

Status asymmetry in unions—the relative inequality in status between partners—matters because individual status typically translates into power within the union. The relative resources theory, originally developed by Blood and Wolfe (1960), is based on the idea that bargaining power rests with the partner who contributes the most, or the most important, resources to the household. Resource theory posits that the power individuals command in unions is thus based on socially recognised status markers, such as income, class position and occupational prestige. This theory has been tested with regard to the gendered division of housework, and studies from the US and Sweden have found that men with higher income and correspondingly higher status than their female partners complete less housework (Bianchi et al., 2000, Bittman et al., 2003, Nermo and Evertsson 2004).

The link between resources and decision-making is particularly likely to be strong in a country like Sweden, where gender egalitarian ideologies are prominent (Nermo and Evertsson 2004). In such settings, couples may reject lines of reasoning that rely on traditional notions of gender and instead may

prefer more material considerations as 'rational' guidelines for decision-making within unions. Indeed, in the studies discussed above linking relative earnings to housework, the Swedish case provided stronger support for relative resource theory with men's contribution to housework more closely matching their income contribution. In contrast, in the American context, men were less likely to do the housework when their female partners out-earned them indicating support for a stronger gendered division of labour and weaker support for gender egalitarian ideologies. As gender egalitarian ideologies become more widespread however, women's economic and social status markers are likely to become increasingly important factors for bargaining and the division of power within unions. However, such gender-neutral reasoning may disempower women in unions due to their typically lower status attainment.

The power balance within unions is important because it shapes negotiation dynamics regarding both matters of daily life, such as childcare and housework responsibilities, and larger life decisions such as the transition to marriage, childbearing, staying in or leaving the workforce, choice of residential location, and union dissolution. Female status hypogamy, insofar as it implies greater female power in unions, thus has important implications for the micro-level experiences of negotiation and decision-making power within families.

In addition to these micro-level effects, the emergence of female hypogamy is an important phenomenon if it serves to dismantle gender norms in society. The increasing willingness of women to choose a partner who has lower status, and the willingness of men to enter such unions, undermine the traditional gendered expectations of unions as being based on male status-dominance. The ability of men and women to enter unions characterized by female status dominance signals a decoupling of power from gender in the sphere of family life, which has consequences for female empowerment in society. The increasing prevalence of female-hypogamous unions thus merits attention because it could signify a re-ordering of power within unions and within society more generally. However, although researchers have noted the significance of the emergence of this trend, our understanding of the potential meaning of female hypogamy remains underdeveloped.

Multiple measures of status

Understanding relative status in unions is important for understanding relative access to power, but status can be measured in multiple ways. Though many studies of assortative mating have focused on educational level, researchers have also examined trends in homogamy according to class of social origin, income, and occupation. Each of these three status measures reflect resources that individuals possess and which they contribute to their joint household. Individuals typically seek out partners who share their status level, or aim to maximize their potential partner's status in order to maximize their joint household resources (see Schwartz 2013 for a discussion).

The first social status measure examined in this study is socio-economic class of origin. Social class of origin is significant as a factor in partner choice because it reflects the experiences, values, social and economic resources available to individuals through their families (see Kalmijn 1998 and Blossfeld 2009

for reviews). Boundaries between social classes can be challenging to cross in romantic unions, and social class homogamy remains strong in contemporary societies. Even in relatively open societies such as the Nordic countries, individuals coming from higher and lower class backgrounds tend to enter class homogamous relationships, and in Finland this trend has not weakened as a consequence of educational expansion (Mäenpää and Jalovaara 2015). Relative social class is an important measure of relative status because it is related to access to different forms of resources such as economic support from family and access to family-based social networks.

An additional status measure examined in this study is occupational prestige, which captures the social standing of an individual based on the type of job they have. This measure is based on the social desirability of occupations and is a measure of social rewards to working in an occupation which may be similar to, but may also compensate for, income (Treiman 1977). Individuals with high occupational prestige tend to have higher social capital and may thus access resources via the exclusive social networks and social respect that their occupations command. In the year 2000, women and men in Sweden had similar occupational prestige, and occupational prestige was to some extent independent from income, especially for women (Magnusson 2008). This measure is thus significant to study as a compliment to income, because it may reflect status advantages beyond income as perceived by the individual or society.

The final measure of social status considered in this study is income. Income is a major social status marker and men's income continues to be an important factor in partner selection. Relative income contributions are likely to be related to relative power due to the reliance of the household unit on the resources contributed by each individual. As women have entered higher education and the labor force, women's own income has become significant for most households and an important factor in partnership formation (Oppenheimer 1988, Sweeney and Cancian 2004). Although women's income may have become an asset in the partner search, whether relative income contributions by women within households may not have shifted across cohorts has been less studied. The importance of women's income for the household has been emphasized in recent demographic research (Vitali and Arpino 2016, Klesment and Van Bavel 2017). Women in Sweden, as in other countries, have lower wages than men (14% lower in 2011) This wage gap has been consistent since the 1980s (Boye et al. 1970), and is larger among the highly educated (Evertsson et al. 2007, Evertsson et al. 2009). Thus based on the distribution of incomes in the population it is not likely that women would outearn their male partners, and this is important to keep in mind when interpreting the results. Nevertheless, despite the gender wage gap, many women could choose to a greater extent partners who earn a similar or a lower amount than they do if they had a strong preference for doing so.

All four of the status measures discussed above relate to access to resources, and thus to the exercise of power within unions. By considering the status asymmetry along more than one dimension, we gain insights into the meaning of unions which cross the educational status boundary.

Educational hypogamy and relative status

In recent decades, societies have placed an emphasis on the advancement of women, and higher education is an area where the change has been particularly dramatic. Women have gone from being a minority to a majority in tertiary education in almost all OECD countries (KC et al 2010). Researchers initially speculated that the reversal of the gender gap in higher education would lead to a higher rate of singlehood and childlessness among women, as traditional gender norms are incompatible with relationships where women occupy a higher economic and social status position relative to their partner (Van Bavel 2012, Blossfeld 2009). However, rather than remaining unpartnered, many women have "partnered down" educationally in countries where they out-achieve men in higher education (Esteve et. al 2012, Esteve et al. 2016, Domanski and Przybysz 2007, Grow and Van Bavel 2015).

The emergence of educational hypogamy could be a sign of a reordering of power dynamics within unions, and thus of progress towards greater gender equality. However, women's higher educational status may not necessarily imply a decline in male-dominant unions. We consider two potential interpretations of the rise of female educational hypogamy.

a) Emergence of female status dominance

One explanation for the rise of female educational hypogamy is that women are moving away from preferences for a high status partner. Indeed, the assumption that female educational hypogamy may imply emerging female dominant models of partnership is present in much of educational assortative mating literature. In their paper documenting the decline in female educational hypergamy, Esteve, Garcia-Roman, and Permaneyer (2012) write that "…women's increasing levels of education may have important implications for the erosion of traditional patterns in assortative mating and may represent a step toward achieving symmetry in union formation," and suggest that the decline of female educational hypergamy needs to be explored further. The emergence of educationally hypogamous unions has been seen as part of a broader trend of weakening gender roles, alongside the rise of "female breadwinners" – women who out earn their male partners (Wang et al. 2013, Klesment and Van Bavel 2017, Esteve et. al 2016).

We could expect that women with a higher educational attainment than their partners also have a higher relative status according to other measures. This is due to the positive association between higher education and status. For example, social class background continues to be a predictor of higher educational attainment in Sweden, even though class inequalities have narrowed over time (Jonsson and Erikson 2000). Additionally, jobs which require higher education tend to have a higher prestige score than jobs which do not. Likewise, college graduates typically outearn those without a degree—even if some graduates benefit more than others and returns to education decline somewhat after educational expansion (Björklund et al. 2010). More generally, women who 'partner down' in terms of education have shown their willingness to cross a status boundary. Therefore, these women and their partners may thus generally

hold less gender-traditional attitudes and be more open to less traditional relationship power dynamics. Additionally, women who have a higher degree and good employment prospects are more independent and thus more able to select partners based on non-economic characteristics, such as physical appearance or willingness to contribute with housework (Press 2004).

b) Persistence of female status hypergamy

An alternative possibility is that female educational hypogamy does not imply the re-ordering of the gendered power order in unions, but continued hypergamy in terms of other measures of status. This could be the case for two reasons: first, due to "status compensation" by men, and second, due to the decreasing value of higher education.

One interpretation of female educational hypogamy is that women partner down in terms of education, but that their partners compensate for their lower education with higher status in other forms, e.g. class background, income, or occupational prestige (Blossfeld and Timm 2003). Highly educated women's preference for higher education in potential partners might be weaker than their preferences for other forms of social, economic, and cultural status. Alternatively, higher status in other dimensions could bring the same types of resources as education. For example, a higher class background could provide exposure to academic networks and cultural capital similar to that afforded by higher education. Women could use their education as a resource during the partner search to attract a partner who has relatively higher status along other dimensions, and thus maintain traditional gender norms for female hypergamy.

An additional explanation of continuing status hypergamy is that women's social and economic returns on higher education have become lower as a consequence of educational expansion. Prior to educational expansion, college education was a marker for a small, elite group. In Sweden, higher education was expanded following a major reform in 1977. The goal of the reform was to open higher education to a broader population, and this was accomplished by expanding educational programs and institutions (Högskoleverket, 1998). One facet of the reform was the introduction of new post-secondary institutions throughout the country, which would primarily attract local students, in contrast to traditional universities. Additionally, many new degree programs were created. Many of these degree programs were vocational in focus, such as programs for nurses and pre-school teachers—professions which previously did not require higher education.

Educational expansion has been accomplished through broader access and thus a diminished social prestige of higher education. Although higher education continues to provide social and economic returns for graduates, it is no longer a consistent signal of prestige and researchers have documented major variation in outcomes of college graduates (Gerber and Cheung 2008). The decline in the value of education may have consequences for women, who overtook men in higher education in Sweden following the 1977 reform. Women have been especially likely to earn vocationally-oriented degrees or to attend newer, less prestigious, institutions (Högskoleverket, 1998).

The social status commanded by short vocational degrees, or by degrees earned at regional institutions, may not be sufficiently distinct from the status derived from vocational-oriented secondary education.

Thus, unions which cross the boundary between the two different educational groups may not involve as large of a status disparity between partners as they had in earlier decades. Hence, women's educational hypogamy may not be a dramatic departure from prevailing hypergamous norms about women partnering up along status lines. Within this context of wider educational expansion and the changing importance of a post-secondary degree as a status marker, other dimensions of status to measure hypergamy may be more reliable or meaningful indicators of status asymmetry within unions. In the next section, we discuss other measures that may be more meaningful indicators of status asymmetry.

Research Design and Data

This study uses high-quality Swedish register data to study relative status within unions with at least one post-secondary educated partner. Swedish registers make it possible to study several status indicators over a long time period: we study the cohorts born in 1950-2, 1960-2, 1970-2, and 1980-2. The first three groups of cohorts have all formed their first unions (if any). The 1980-2 cohorts have not completed their union formation (our data cuts off at age 30-32), but they represent the most recent trends in partnership formation and are thus included. The major expansion of higher education occurred in Sweden in 1977 (see Appendix 1 for a figure of trends in educational attainment for men and women), and thus the 1950-2 cohorts experienced an educational system where women were in the minority, whereas the 1960-2, 1970-2, and 1980-2 cohorts entered the already expanded educational system.

We focus on childbearing unions as these are a consistent point of comparison in a society where the prevalence, timing, and social meaning of marriage has transformed radically over the last decades. We study hypogamous unions (woman post-secondary, man secondary or lower), hypergamous unions (man post-secondary, woman secondary or lower), and homogamous unions (man and woman post-secondary), to examine how the trends have changed in different resources women and men possess at the time of union formation. We include only unions where at least one partner has a post-secondary education. This restriction enables us to contribute to the literature on the social consequences of the higher educational expansion, rather than taking into account changes in the entire educational distribution. Additionally, our primary focus is on understanding the emerging trend of female educational hypogamy, and unions where the woman has a secondary education and the man has a primary are much less common.[1] The study population in each union type by cohort, as well as information about the mean age of union formation, and status variable means and missingness, are shown in Table 1. Men in the study are on average aged 32, and women are aged 30-31, at the point at which we measure their status markers.

To examine trends in relative socio-economic status within unions we measure status in three different ways: social origin (social class of parents), income, and occupational prestige. We use individual records from the register data to identify all individuals from our birth cohorts. We restrict the sample to women whose complete educational and partnership histories are known by excluding women who immigrated to

[1] *These unions constitute less than 15% of all first childbearing unions formed in the 1980s, and less than 8% of all childbearing unions formed in the 1990s and 2000s*

Sweden after age 15, and those who migrated away from Sweden, as well as those who do not survive until age 40. We then link the study population to their childbearing partners via the multigenerational register and use the personal identifiers for the women and their partners to measure their respective status according to the three status indicators.

We attain the measure of social class of origin by connecting the women and their partners to their respective parents through the multi-generational register. We then use data from censuses conducted quinquenially 1960-1990 to extract occupational and educational information about the parents of the women and their partners when they are between ages ten and twenty. We code the occupation and education indicators using SEI, Statistic Sweden's old method for socioeconomic stratification. This schema is reproduced in Appendix 2.

This status scale is not suitable for contemporary economies, but it was in use when the census data was collected and it fits the purposes of our study. The schema is based on employment and education, and the main division is a three-fold distinction between white-collar works, blue-collar workers and employers and managers (Statistics Sweden 1982). Within these three divisions, there are sub-divisions based on employees' years of education. For example, non-unionized manufacturing workers have 11 points on the SEI scale, while middle-level white-collar workers have 46 points. The average SEI score is between 36-40, and SEI increased over time in the sample (see Table 1). The units on this scale make it suitable for our purposes: there is a jump of 10 points between worker categories, and smaller differences within categories.

The SEI scale is ordinal with the exception of farmers, the self-employed, and students and people who are out of work. Farmers have the highest SEI level with 89 points, and the self-employed have 79 points. We exclude these groups from our analysis of relative status, as it is not possible to tell from census data how large the businesses/farms are and thus we are unable to classify these groups in relation to others. We also exclude workers whose occupations are unclassified, those who are retired, or not working. We omit individuals where both parents are in an omitted category from the comparison, which is a sizeable share of all unions, particularly in the oldest cohorts (see Table 1 for missing information). We use the dominance principle to label an individual's class background, taking the highest observed SEI between the mother and the father, though in cases where the highest status is a farmer or an employer, we use the status of the other parent.

The second status measure used in this study is income. We draw income information from the registers for women and their partners two calendar years prior to the year of birth of their first child, in years 1968-2010. We compare the disposable outcome of women with that of their male partners as taken from the registers. This measure of disposable income measures after-tax income that includes all sources of income including employment, social benefits such as unemployment or sick leave, student benefits, and so on. It is thus the best available measure of the financial contribution men and women make to their household. Income information is nearly complete for all the cohorts studied (see Table 1 for information).

The third measure of status is occupational prestige, based on individual occupation codes in the years prior to or immediately following the year of the union formation (birth of the first child). Occupational information is drawn from two census data points (1985-1990), where the entire population is covered. Thereafter, no occupational information was collected in Sweden until 1996, when the register provides information on all public sector employees and employees of large companies (500+ employees). Smaller companies are randomly sampled each year, meaning every person has a reasonable chance of being captured in the registers. For unions formed before 1996, we find the occupation in the most recent previous census, supplementing with the following census in the case of missing data. For unions formed after 1996, we search the six years prior to and following the year of union formation for an occupational record.

Occupations in the Swedish registers are coded using a scheme similar to ISCO, and these codes are then converted into the SIOPS occupational prestige scale (Ganzeboom, De Graaf, Treiman 1992). This measure is not available for the 1950-1952 cohorts, as job codes are too aggregated prior to the 1985 census to translate into SIOPS codes. A substantial share of the data on occupations are missing due to the sampling of small companies, but this data does not appear to bias the results (see Table 1 and imputation analysis in Appendix 3). This occupational prestige scale values for the women and men in the study range from 17 to 78, with health professionals ranking 63 and sales workers as 31. The average SIOPS of the study sample has decreased slightly across cohorts, reflecting the expansion of higher education among less prestigious occupations. As discussed above, this scale aims to capture social stratification for each job, including aspects such as social approval and deference.

In analysing the data, we compare the status indicators for the women and the men in each union. The majority of the work in this manuscript is to produce the data set on the status characteristics, and the analysis we present in this manuscript is simple descriptive results by cohort. We use density plots and plot differences between men and women's status. For SEI and SIOPS, we plot the difference between the female and the male's partner in points. For income, we plot the share of the woman's disposable income in the sum of both partners' incomes. We present the results for each indicator by creating one density plot per cohort, which shows the distribution of relative status within each of the union types (both tertiary, man only tertiary, and woman only tertiary). These density plots are an excellent presentation tool for such results because make it possible to visually note where the data points for each union type are concentrated. Density plots are best understood as smoothed histograms, where the researchers do not define the number of bins. It is a visual representation of the probability density function: the total area under the curve is 1, and the probability of a value being between two points on the x-axis is the area of the curve between those points. We follow each density plot with a table which presents the mean and standard deviation values for men and women within each union type, by cohort. These tables enhance the comparison between men and women but also provide the data necessary to examine status differences *between* different unions types, to supplement the visual analysis of inequalities between men and women *within* unions.

Table 1: Population size, characteristics, missing / omitted values

	Men				Women			
Cohort	50-52	60-62	70-72	80-82	50-52	60-62	70-72	80-82
All unions	21015	27278	38640	17615	17776	29357	39300	25983
Both Tertiary	6073	7775	12405	5223	5048	8302	12169	8104
Man only tertiary	7178	5992	7591	3469	7168	5812	6881	4404
Woman only ter/	7764	13511	18644	8923	5560	15243	20250	13475
Mean age at first child								
Study N	32.3	32.0	32.5	29.1	29.7	29.9	31.0	28.7
Both Tertiary	32.9	32.9	32.9	29.4	30.6	30.6	31.6	29.1
Man only tertiary	31.2	32.7	32.9	29.2	28.1	29.3	30.7	28.3
Woman only ter/	32.6	31.2	32	28.8	30.9	29.7	30.7	28.5
Mean Values								
Income	669	1348	2089	2187	477	927	1599	1879
(SD)	1642	4064	2173	1250	1658	1045	1226	976
Income partner	495	1052	1682	1881	455	1131	1996	2347
(SD)	526	780	1644	907	428	1062	3373	1957
SIOPS	53	49	50	48	53	50	51	51
(SD)	13	13	13	14	11	11	11	12
SIOPS partner	51	50	52	50	55	49	49	47
(SD)	11	11	11	12	13	13	12	13
SEI	35	36	39	40	35	36	40	40
(SD)	16	16	15	15	16	16	15	15
SEI partner	34	36	39	40	36	35	39	40
(SD)	16	16	15	15	16	16	15	15
Missing and omitted values								
SEI	18%	8%	14%	12%	20%	9%	14%	13%
SEI partner	23%	12%	16%	15%	23%	13%	17%	16%
Income	0%	0%	0%	0%	0%	0%	0%	0%
Income partner	1%	1%	1%	1%	2%	1%	1%	1%
SIOPS	10%	10%	7%	4%	22%	12%	9%	4%
SIOPS partner	16%	14%	11%	10%	19%	12%	21%	23%

Results

Figure 1 shows trends in relative education within the three types of unions examined: unions where only the woman has a post-secondary education, both partners have a post-secondary education, and only the man has post-secondary education. Each bar represents the size of that type of union as a percentage of all unions with at least one post-secondary educated partner. Among the 1950s cohorts, unions with a highly educated man and lower educated women were the most common. Starting from the 1960 birth cohort, the share of unions where women "partner down" educationally jumped dramatically. This figure also shows that, when measuring unions by the educational achievement of the partners at the time of union formation, educationally hypogamous unions have been prevalent in Sweden for decades. Across the 1960-1980 birth cohorts, the relative share of educationally homogamous unions has increased slightly, while the share of unions where only the male partner has a higher education has decreased slightly.

Figure 1: Union type in unions with at least one post-secondary educated partner, by cohort.

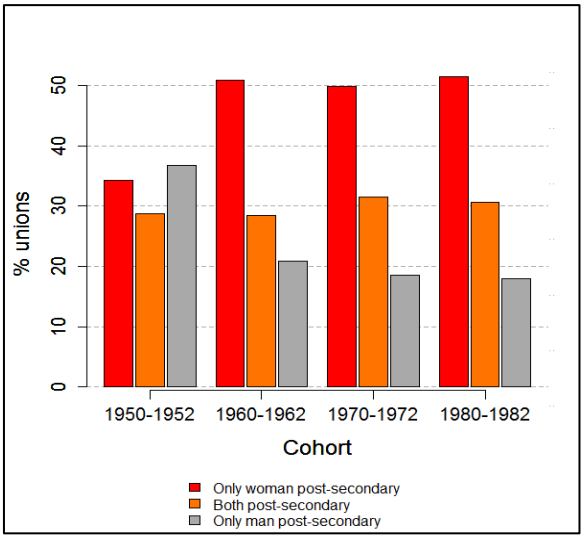


Table 2 presents descriptive results regarding women's relative status to their partner: women in hypogamous unions, women in homogamous unions, women in hypergamous unions, and all women. This table can be seen as a summary for the results presented in more detail through the density distribution plots. Above, we have outlined two possibilities: that women in educationally hypogamous unions might be status-dominant in general, or that hypergamy might continue along other status dimensions. Our analysis reveals that women's relative status in unions depends on the measure of status being used. We discuss results for each status measure in turn.

When considering social class origin, Figure 2 shows that men and women are roughly even in occupying the status dominant position. The dashed black line represents unions where both partners

have a higher education, while the red and blue lines refer to unions where the woman and the man (respectively) have the higher education. As Figure 2 shows, the distribution across the zero line (where both partners have an equal SEI score) is relatively even. On the right of the zero line are unions where the women's parents have a higher status, while on the left of the line are the unions where the men's parents have a higher status. Generally, unions where both partners have a higher education are also the most equal. In unions where one partner has a higher education, that partner also tends to have higher class status. This is particularly the case for unions where women have higher education. As seen in Table 2, women are slightly more likely to have a higher SEI in unions where they are the only highly educated partner compared to other unions.

The distribution also looks quite similar over time: the most common is unions where both couples have the same level (usually a white-collar background), or a ten point difference (for example, children of lower-level white collar and middle-level white collar workers). Unions with larger difference (for example, children of higher-level white collar workers and non-unionized manufacturing workers) are much less common across cohorts. The shape of the density distributions is quite similar across cohorts. The likelihood that men and women come from the same class background has increased over time, particularly when comparing the cohorts born in the 1950s-1970s, and the tendency for social class homogamy is the strongest among educationally homogamous couples.

Table 2: Relative status in unions, by union type and cohort

	Both post-secondary				Man only post-secondary				Woman only post-secondary				Any post-secondary (all unions in sample)			
Cohort	1950-1952	1960-1962	1970-1972	1980-1982	1950-1952	1960-1962	1970-1972	1980-1982	1950-1952	1960-1962	1970-1972	1980-1982	1950-1952	1960-1962	1970-1972	1980-1982
Social Class																
Woman Higher	35%	35%	37%	37%	29%	30%	35%	34%	37%	40%	44%	43%	33%	37%	40%	40%
Equal	29%	28%	24%	22%	30%	27%	18%	19%	32%	27%	17%	18%	30%	27%	20%	20%
Man Higher	36%	38%	39%	41%	41%	43%	46%	47%	31%	33%	38%	38%	36%	36%	40%	41%
Occupational Prestige																
Woman Higher	-	22%	25%	28%	-	11%	13%	16%	-	57%	59%	63%	-	37%	39%	44%
"Equal"	-	44%	45%	40%	-	27%	28%	25%	-	29%	27%	22%	-	33%	33%	28%
Man Higher	-	34%	30%	33%	-	61%	59%	59%	-	14%	14%	15%	-	30%	27%	28%
Income																
Woman Higher	24%	20%	21%	24%	31%	18%	20%	22%	25%	22%	24%	25%	27%	20%	22%	24%
"Equal"	27%	24%	23%	24%	22%	20%	17%	17%	26%	23%	21%	20%	25%	23%	21%	21%
Man Higher	50%	56%	56%	52%	47%	62%	63%	61%	49%	55%	55%	55%	49%	57%	57%	55%

Figure 2: Relative status of men and women by socio-economic background (SEI measure), by birth cohort and union type.

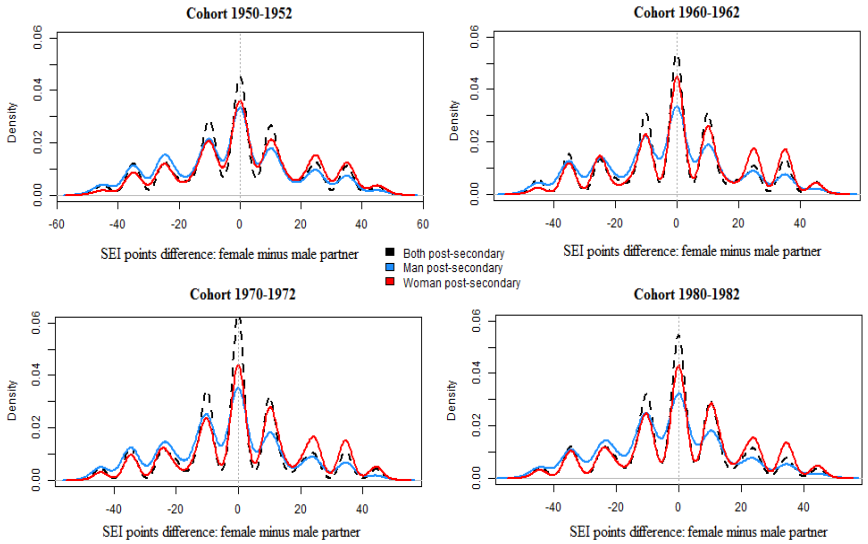


Figure 2 is useful for analyzing differences within unions with respect to the relative status of men and women. Table 3 supplements this figure by providing information for the mean SEI value for men and women in the different union types and cohorts. This allows us to compare relative status between the different union types. In Table 3, we can see that both men and women have the highest status in unions where both partners have higher education, compared to unions where only one partner has a higher education. Women who are "partnering down" and "partnering up" in education have the same social class background, which is lower than the educationally homogamous group. For men, men who "partner down" in education tend to have a higher class background than men who "partner up", but the men in the "both highly educated" group have the highest class status.

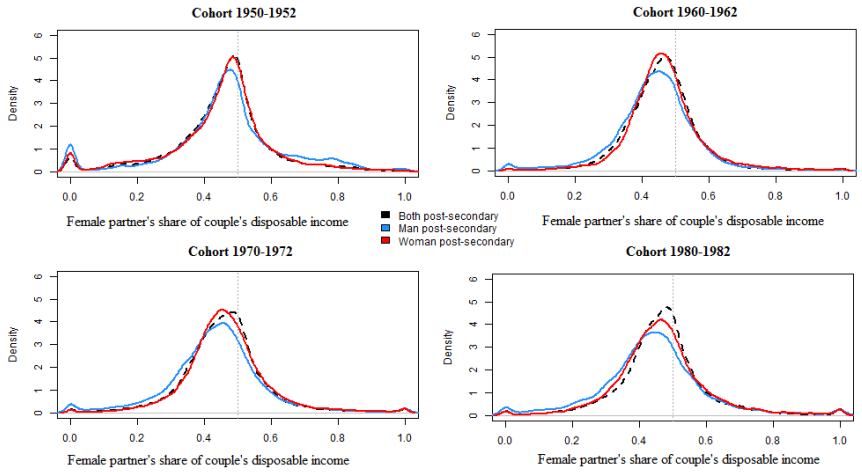
Table 3: Mean and (Standard Deviation) for SEI for men and women, by union type and cohort

	Mean (SD) SEI for Women by Union Type		
	Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort 1950-52	33 (16)	33 (16)	38 (15)
Cohort 1960-62	34 (16)	34 (16)	40 (16)
Cohort 1970-72	44 (21)	44 (22)	47 (19)
Cohort 1980-82	43 (19)	43 (20)	46 (17)

	Mean (SD) SEI Men by Union Type		
	Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort 1950-52	31 (16)	37 (16)	38 (16)
Cohort 1960-62	32 (16)	38 (16)	41 (15)
Cohort 1970-72	43 (23)	46 (20)	48 (19)
Cohort 1980-82	41 (20)	46 (17)	47 (16)

The second measure of status considered in this study is disposable income. Figure 3 below shows the distribution in unions in terms of the female partner's share of the couple's disposable income. The majority of the density plots peak to the left of the vertical line at 50%, meaning that in most couples the man has a higher share of the disposable income. Despite this tendency towards inequality, women generally earn a significant share of the household income, and the peak of the distribution is somewhere between 40-50%. The figure shows a slight peak at 0% for all cohorts, representing unions where the woman is not receiving any disposable income in two years prior to the birth of the couple's first child, though this peak is most prevalent in the 1950-1952 cohorts. Generally, the couples where men have a higher education are those where men earn a higher share of the disposable income. However, women who have higher education than their partners do not appear to have a more equal or a higher share of disposable income. Female educational dominance in unions does not translate into female financial dominance—though unions where women contribute 100% of the household income are most likely among couples where only women have higher education. The pattern of female share of household income appears to have shifted somewhat over time. Among the most recent cohort 1980-82, it appears that educationally homogamous couples are the ones where women seem to be contributing the highest mean fraction to the household income, whereas in the 1970-72 cohort it seems like educationally hypogamous unions were the ones doing this. Among the youngest cohort, it seems like there has been an increase in the 100% women category.

Figure 3: Relative status of men and women in disposable income, by birth cohort and union type.



Here too we supplement Figure 3 with Table 4, which shows means and standard deviations in income for men and women. With the exception of the 1950-1952 cohorts, women in educationally homogamous unions have the highest income. In the later cohorts, women who "partner down" and "partner up" are comparable, though women who "partner down" are higher earners in the youngest cohort. For men, those who "partner down" out-earn men who "partner up", and educationally homogamous men out-earn both of these groups.

Table 4: Mean and (Standard Deviation) for disposable income, for men and women by union type and cohort

		Women, by Union Type		
		Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort	1950-52	558 (1651)	398 (944)	516 (696)
	1960-62	938 (1139)	940 (582)	1111 (666)
	1970-72	1561 (1422)	1559 (1049)	1812 (1660)
	1980-82	1831 (960)	1726 (938)	2053 (912)

		Men, by Union Type		
		Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort	1950-52	559 (695)	542 (1861)	625 (640)
	1960-62	1097 (1032)	1297 (1144)	1440 (5216)
	1970-72	1854 (3213)	2187 (3008)	2252 (1951)
	1980-82	2181 (1663)	2299 (1949)	2439 (1610)

The final measure of status we examined was occupational prestige, measured by occupational codes and converted to the SIOPS scale. Rather than measuring resources at an individual's disposal, this measure aims to rank the perceived social standing of different professions. The measure for occupational prestige has a large proportion of missingness as described in the data section. To investigate potential bias introduced by this missingness we performed an imputation analysis as detailed in Appendix 2. The results shown in Figure 4 include imputed results.

Figure 4 shows the relative position of men and women with a points difference—couples on the right of the dashed line are those where women have the higher prestige, while those on the left of the line are those where men have higher prestige. Couples where both have a higher education (black dotted line) are much more likely to have an equal prestige than those where the education level is uneven (red and blue lines). Among couples where both have a higher degree, the most common is a difference close to zero. The distribution appears quite symmetrical across the zero line, although as shown in Table 2, men have a slightly higher occupational prestige score than their partners. In unions with an unequal education, partners are less likely to have a similar prestige score and the highly educated partner is much more likely to have the higher prestigious job. A common difference is below 20 points, and examples of such pairings are a dental hygienist (SIOPS 44) and a plumber (SIOPS 34), a civil engineer (SIOPS 70) and a secondary school teacher (SIOPS 57-60), or a social work professional (SIOPS 52) and an electrical engineering technician (SIOPS 46). Similar to the results for social class and disposable income, there is not much change across cohorts in the shape of the distributions. The relative position of men and women within different types of unions appears to be rather stable over time.

Figure 4: Relative status of men and women in occupational prestige (SIOPS scale), by birth cohort and union type.

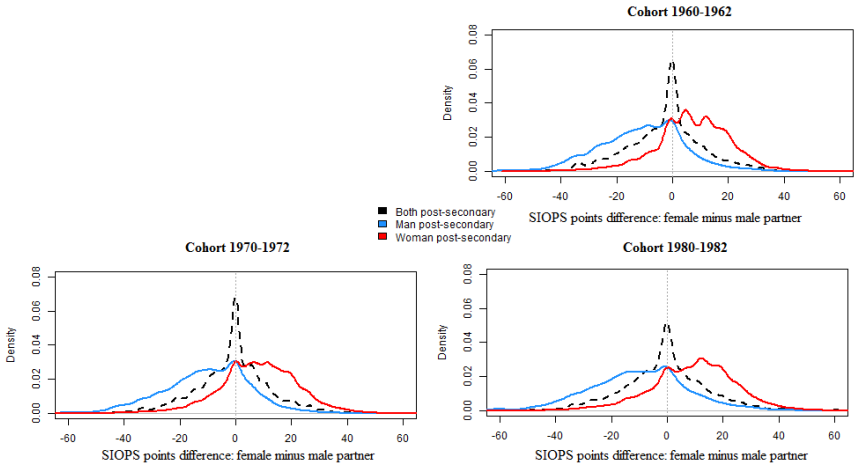


Table 5 shows means and standard deviations in SIOPS for the different couple types. Similar to social class and income, the couples where both partners are highly educated are the couples with the highest occupational prestige. Men who "partner down" as well as women who "partner up" have slightly lower occupational prestige on average (about a 3 point difference). Men and women who "partner up" have much significantly lower occupational prestige across the cohorts studied, reflecting the persistent association between higher education and occupational prestige.

Table 5: Mean and (Standard Deviation) for occupational prestige, for men and women by union type and cohort

	Women, by Union Type		
	Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort 1950-52	-	-	-
Cohort 1960-62	51 (9)	43 (12)	54 (10)
Cohort 1970-72	52 (9)	44 (13)	55 (10)
Cohort 1980-82	51 (11)	43 (14)	54 (12)

	Men, by Union Type		
	Woman H.Ed.	Man H.Ed.	Both H.Ed.
Cohort 1950-52	-	-	-
Cohort 1960-62	43 (11)	54 (11)	57 (11)
Cohort 1970-72	43 (11)	54 (10)	56 (10)
Cohort 1980-82	41 (12)	53 (12)	55 (12)

Discussion

Women have increased their participation in higher education dramatically over the last decades, thus closing or reversing the gender gap in post-secondary education in most European countries (Van Bavel 2012). The emergence of a reverse gender gap could have led to increased childlessness and singlehood among highly educated women. Instead a new pattern of female educational hypogamy has emerged in several countries (Domański & Przybysz 2007, Mäenpää & Jalovaara, 2015). This

new trend is unprecedented in societies where women have typically partnered with men who have equal or higher status.

This study contributes to our understanding of female educational hypogamy by considering status asymmetries in unions with different educational combinations. We presented results for relative status in terms of relative social class of origin, disposable income, and occupational prestige. For this we use rich Swedish register data and examine trends for cohorts born in 1950-2, 1960-2, 1970-2, and 1980-2. We compare unions where both partners have a higher education, only the men have higher education, and only the women have higher education. We study status differences within unions as well as between unions.

The number of female hypogamous unions has grown dramatically over the cohorts studied, and this study has contributed to our understanding of the dynamics within these unions. To some extent this change is driven simply by the arithmetic of gender inequality in higher education. However, it also reflects the willingness of women to partner down in terms of education, and their ability to match with someone who has a lower educational level—rather than remaining childless. In terms of class background, we found that hypogamous unions were characterized by relative balance in terms of class, though women were more likely to have a higher class background. Results for differences in disposable income reveal a stark trend in female hypergamy—in all cohorts, in the clear majority of unions, men earn more than women prior to the birth of the first child. This is a very interesting result because it shows that women do not have the dominant position in terms of resources in the household. Our analysis showed, however, that differences in income were not very large. To some extent, these differences reflect the gender wage gap in Sweden, which is not taken into account in this study. When taking into account occupational prestige it seems that women in educationaly hypogamous unions tend to outrank their male partners. In combination with the social class result, we are able to conclude that women in hypogamous unions have higher relative social standing, but fewer economic resources than their male partners.

It seems possible that education has become less important as a screening variable in the partner search for women, and that when considering socio-economic resources of a potential partner, they instead seek to maximize income. Men in unions where the women "partner down" have an average income similar to that of highly educated men who "partner down"—though lower than highly educated men in educationally homogamous unions. To some extent, women "partnering down" thus find a partner whose earnings are similar to those of men with higher education. In this scenario, educational groups would thus not be sufficiently different in terms of their social standing, and crossing an educational boundary would be less important than matching with a partner who maximizes resources in another way. Women would thus be more willing to accept a partner with a lower educational level but a higher income. A contrasting explanation for the same trend could be that women take a big social step by partnering across educational boundaries. They therefore seek to partner with someone who has a high income in order to compensate for the difference in the

social/cultural capital between the partners. It is not possible for us to distinguish between these two scenarios with the research approach used in this study, but the results in this study are useful for planning future research to study status asymmetry in romantic partnerships. An interesting development of the current study would be to take into account the differences in men and women's incomes to determine the extent to which the gender wage differences observed within unions could be different at the same social level of gender wage gap.

Overall, the emergence of female educational hypogamy does signal the greater prevalence of female status dominance in unions. However, in terms of relative social class and income, unions where women have the higher education are not dramatically different from unions where women have an equally or a higher educated partner. Moreover, women have not become more likely to occupy a status-dominant position in their unions over time. Thus despite the gains made by women in education over the last decades, women are not necessarily occupying the status dominant position in their home. Additionally, our analysis shows that unions where both partners have higher education tend to have higher status in terms of social class background, occupational prestige, and income, compared to other union types. Thus couples where the women "partner down are disadvantaged compared to couples where both partners have higher education.

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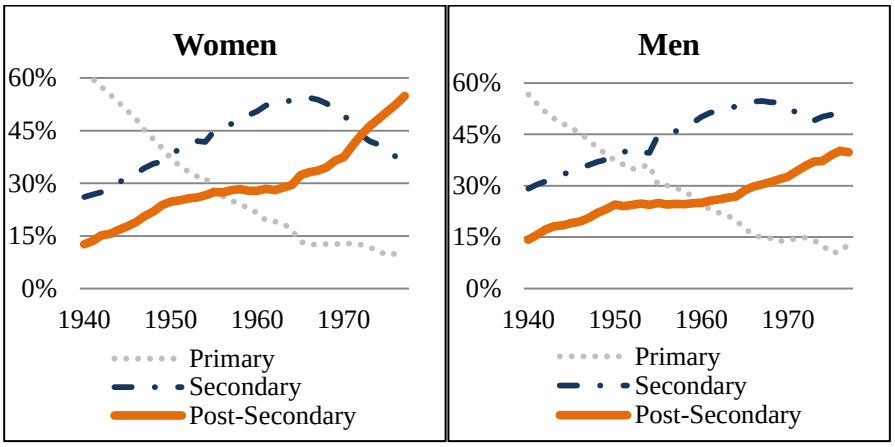
Appendix 1: Educational expansion in Sweden: Cohort trends in highest educational level attained by age 35 for Swedish-born men and women.



Appendix 2: SEI Scale

SEI Score	Occupations
11	Unskilled employees in goods production
12	Unskilled employees in service production
21	Skilled employees in goods production
22	Skilled employees in service production
33	Assistant non-manual employees, lower level
36	Assistant non-manual employees, higher level
46	Intermediate non-manual employees
56	Professionals and other higher non-manual employees
57	Upper-level executives
60, 79	Self-employed and farmers
89	Farmers

Appendix 3: Addressing missing data on occupational prestige

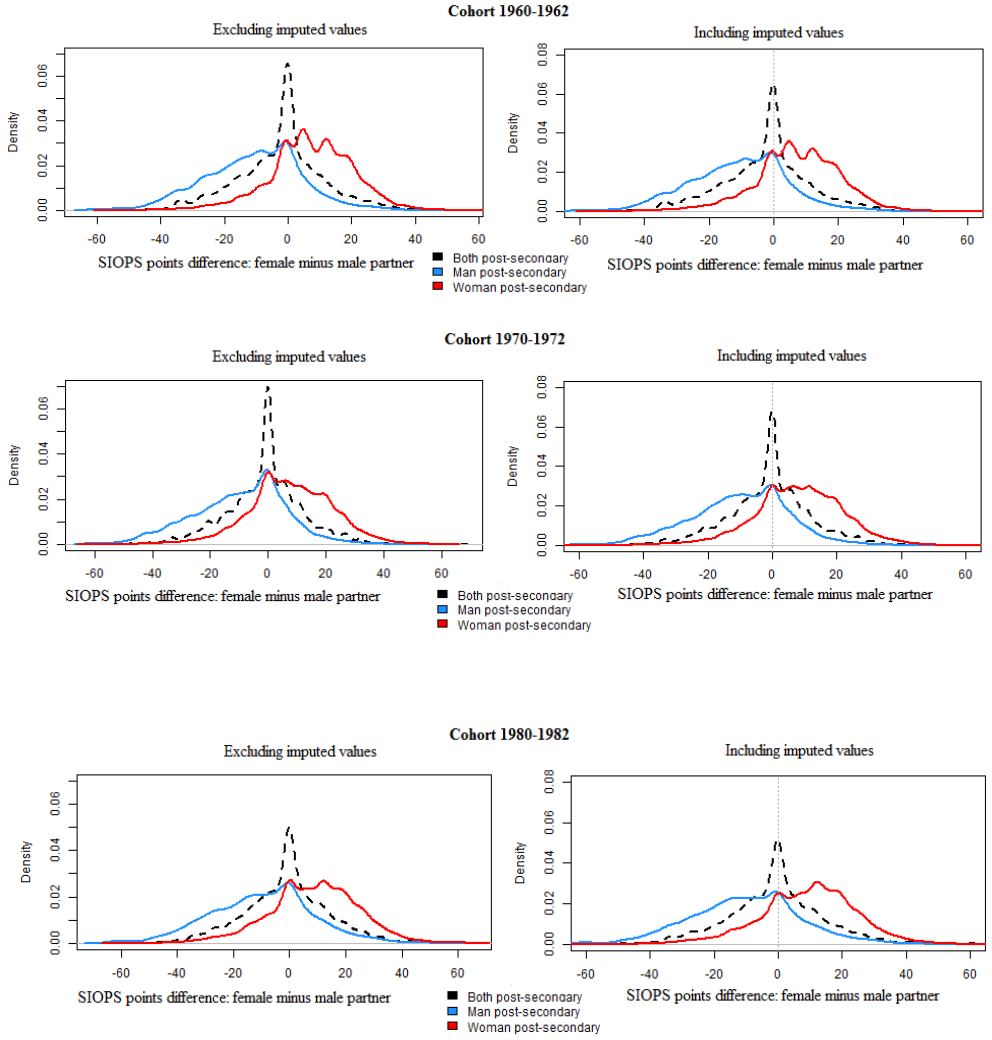
Three of the cohorts examined in this study had a high percentage of missing data for occupational prestige. The reason for this is the data source: prior to 1990, information on occupation was available every five years from a census. After 1990, there has been no census in Sweden, and all data is instead gathered continuously. The data available for this study includes occupational data available from 1994 onwards. There is complete coverage for public sector employees, private sector companies which have 500+ employees, and a sample of smaller private sector companies. Different small employers in the private sector are sampled every year, and we have taken data from multiple years (+/- 6) around the birth of the child to find data available for individuals in the study. However, there is still a significant share of data which is missing, and this data is more likely to be missing for employees of small private sector companies. The high share of missing data, and the systematic nature of the missingness raises questions regarding the reliability of the relative occupational prestige analysis conducted in the study, and we have performed additional analysis to counteract this issue.

We have used four different models to predict occupational prestige codes for men and women who are missing occupational codes. To do this we found job codes for the entire population for each year studied (1994-2012) and converted them to a SIOPS prestige scale. We connected this information to data on each individual's gender, degree level, educational field, and sector. Educational level is a SUN2000 code, which includes information on the level of education (primary, secondary, post-secondary), the length of the degree in years, and whether the degree was vocational or general in orientation. Educational field is a code for the field of specialization which is made in accordance with ISCED97. The sector indicator distinguishes between private and public sector employees. Given that information should be available for all public sector employees in every year, predicting missing SIOPS scores based on other employees within the private sector could give a more accurate result. In order to generate a predicted SIOPS score for an individual we used four different models to impute missing SIOPS scores:

-Model 1: gender, educational level
-Model 2: gender, educational level, educational field
-Model 3: gender, educational level, sector: private
-Model 4: gender, educational level, educational field, sector: private

We then imputed SIOPS by matching the average SIOPS score according to each individual's gender, educational level, educational field, and sector in the year of union formation (the year of their first childbirth). In total, we imputed data for 25,469 couple observations out of 154,421 observations (16% of the data). In the figures below, we show the density plots for non-imputed SIOPS values with those that have been imputed. All four models had extremely similar predicted results, so below we show the results for Model 4, as this is the most complete model. These figures show that, while there are some differences in the shape of the density curves, the imputation does not substantively change the results.

Figure 1: SIOPS density distributions by cohort and union type, excluding imputed values (on left) and including imputed values (on right).



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